Instructions - Parts

FRP Proportioner

3A2012B
EN

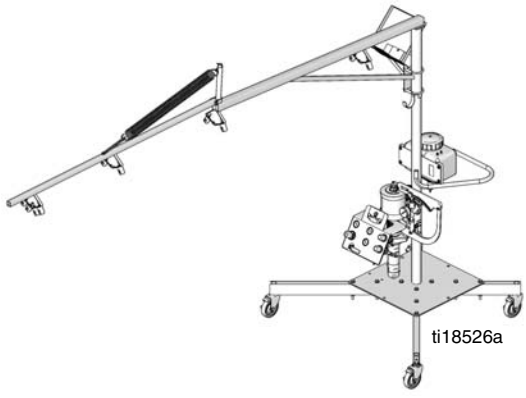
Low emission internal/external mix gel coat and chop proportioners. For use with resin and catalyst in hazardous and non-hazardous locations.
For professional use only.

Important Safety Instructions
Read all warnings and instructions in this manual and all component manuals. Save all instructions.

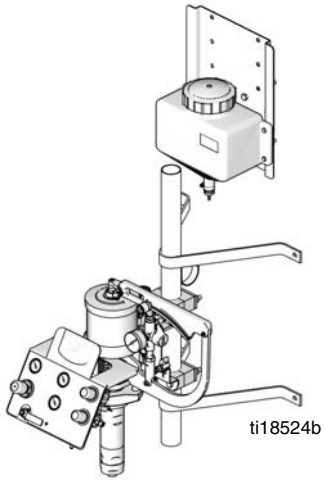
See page 4 for model and agency approvals information. See page 78 for maximum working pressure and other specifications. For patent information, see www.graco.com/patents.

WARNING

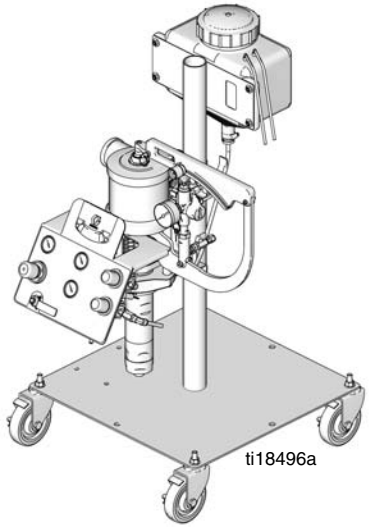
FIRE AND EXPLOSION HAZARD
Oil left in the system at the factory can react with catalyst and create a fire or explosion.
- Flush before first use.
- Do not add catalyst to the catalyst reservoir until the system has been flushed.



Cart and Boom System



Wall Mount System



Cart System

CE Ex II 2 Gc T5

PROVEN QUALITY. LEADING TECHNOLOGY.

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Related Manuals

Manuals are available at www.graco.com. Component manuals in English:

Manual	Description
3A0232	RS™ Gun Instructions-Parts
3A2313	U-Cup Displacement Pump
3A2315	NXT® Air Motor for FRP
308981	Air Operated Diaphragm Pumps
309524	Viscon HP Heater Instructions
307363	Viscon® Heater Instructions
313541	DataTrak Conversion Kit Instructions
308370	ASME and CE-Approved Pressure Pot Instructions (Solvent Flush Pressure Pot)

Agency Approvals

FRP proportioner systems are approved for use in hazardous locations when the base model, all accessories, and all kits meet all wiring meet local, state, and national codes.

Base FRP System with no accessories	CE Ex II 2 Gc T5
DataTrak™ Module	FM C US APPROVED Conforms to FM std 3600 & 3610 for use in Class I Div 1 Group D T3C Hazardous locations CE 0359 Ex II 1 G EEx ia IIA T3 Nemko 06ATEX1124
Accessories	See accessory manuals listed in **Related Manuals** section for approvals.

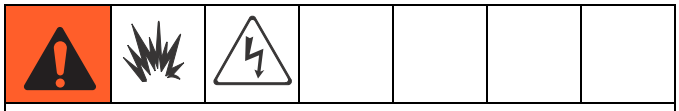
Models

Model	Pump Ratio	Type of Mount	Internal Mix	External Mix	Gel	Chop	Gun and Hose Bundle Included	Hose Bundle Length
16R001	13:1	Cart		✔	✔		✔	25 ft (7.6 m)
16R002	13:1	Cart	✔		✔		✔	25 ft (7.6 m)
16R003	13:1	Cart with Boom		✔		✔	✔	25 ft (7.6 m)
16R004	13:1	Cart with Boom	✔			✔	✔	25 ft (7.6 m)
16R005	17:1	Cart		✔	✔		✔	25 ft (7.6 m)
16R006	17:1	Cart	✔		✔		✔	25 ft (7.6 m)
16R009	13:1	Cart		✔	✔		✔	35 ft (10.7 m)
16R012	13:1	Cart		✔	✔		✔	50 ft (15.2 m)
16R015	13:1	Cart		✔	✔			---
16R018	13:1	Cart with Boom		✔	✔		✔	25 ft (7.6 m)
16R021	13:1	Cart with Boom		✔	✔		✔	35 ft (10.7 m)
16R024	13:1	Cart with Boom		✔	✔		✔	50 ft (15.2 m)
16R027	13:1	Cart with Boom		✔	✔			---
16R030	13:1	Wall Mount (No Cart)		✔	✔		✔	25 ft (7.6 m)
16R033	13:1	Wall Mount (No Cart)		✔	✔		✔	35 ft (10.7 m)
16R036	13:1	Wall Mount (No Cart)		✔	✔		✔	50 ft (15.2 m)
16R039	13:1	Wall Mount (No Cart)		✔	✔			---
16R044	13:1	Cart	✔		✔		✔	35 ft (10.7 m)
16R047	13:1	Cart	✔		✔		✔	50 ft (15.2 m)
16R050	13:1	Cart	✔		✔			---
16R053	13:1	Cart with Boom	✔		✔		✔	25 ft (7.6 m)
16R056	13:1	Cart with Boom	✔		✔		✔	35 ft (10.7 m)
16R059	13:1	Cart with Boom	✔		✔		✔	50 ft (15.2 m)
16R062	13:1	Cart with Boom	✔		✔			---
16R065	13:1	Wall Mount (No Cart)	✔		✔		✔	25 ft (7.6 m)

Model	Pump Ratio	Type of Mount	Internal Mix	External Mix	Gel	Chop	Gun and Hose Bundle Included	Hose Bundle Length
16R068	13:1	Wall Mount (No Cart)	✔		✔		✔	35 ft (10.7 m)
16R071	13:1	Wall Mount (No Cart)	✔		✔		✔	50 ft (15.2 m)
16R074	13:1	Wall Mount (No Cart)	✔		✔			---
16R079	13:1	Cart		✔		✔	✔	35 ft (10.7 m)
16R082	13:1	Cart		✔		✔	✔	50 ft (15.2 m)
16R085	13:1	Cart		✔		✔		---
16R088	13:1	Cart		✔		✔	✔	25 ft (7.6 m)
16R091	13:1	Cart with Boom		✔		✔	✔	35 ft (10.7 m)
16R094	13:1	Cart with Boom		✔		✔	✔	50 ft (15.2 m)
16R097	13:1	Cart with Boom		✔		✔		---
16R100	13:1	Wall Mount (No Cart)		✔		✔	✔	25 ft (7.6 m)
16R103	13:1	Wall Mount (No Cart)		✔		✔	✔	35 ft (10.7 m)
16R106	13:1	Wall Mount (No Cart)		✔		✔	✔	50 ft (15.2 m)
16R109	13:1	Wall Mount (No Cart)		✔		✔		---
16R114	13:1	Cart	✔			✔	✔	35 ft (10.7 m)
16R117	13:1	Cart	✔			✔	✔	50 ft (15.2 m)
16R120	13:1	Cart	✔			✔		---
16R123	13:1	Cart	✔			✔	✔	25 ft (7.6 m)
16R126	13:1	Cart with Boom	✔			✔	✔	35 ft (10.7 m)
16R129	13:1	Cart with Boom	✔			✔	✔	50 ft (15.2 m)
16R132	13:1	Cart with Boom	✔			✔		---
16R135	13:1	Wall Mount (No Cart)	✔			✔	✔	25 ft (7.6 m)
16R138	13:1	Wall Mount (No Cart)	✔			✔	✔	35 ft (10.7 m)
16R141	13:1	Wall Mount (No Cart)	✔			✔	✔	50 ft (15.2 m)
16R144	13:1	Wall Mount (No Cart)	✔			✔		---

Model	Pump Ratio	Type of Mount	Internal Mix	External Mix	Gel	Chop	Gun and Hose Bundle Included	Hose Bundle Length
16R149	17:1	Cart		✔	✔		✔	35 ft (10.7 m)
16R152	17:1	Cart		✔	✔		✔	50 ft (15.2 m)
16R155	17:1	Cart		✔	✔			---
16R158	17:1	Cart with Boom		✔	✔		✔	25 ft (7.6 m)
16R161	17:1	Cart with Boom		✔	✔		✔	35 ft (10.7 m)
16R164	17:1	Cart with Boom		✔	✔		✔	50 ft (15.2 m)
16R167	17:1	Cart with Boom		✔	✔			---
16R170	17:1	Wall Mount (No Cart)		✔	✔		✔	25 ft (7.6 m)
16R173	17:1	Wall Mount (No Cart)		✔	✔		✔	35 ft (10.7 m)
16R176	17:1	Wall Mount (No Cart)		✔	✔		✔	50 ft (15.2 m)
16R179	17:1	Wall Mount (No Cart)		✔	✔			---
16R184	17:1	Cart	✔		✔		✔	35 ft (10.7 m)
16R187	17:1	Cart	✔		✔		✔	50 ft (15.2 m)
16R190	17:1	Cart	✔		✔			---
16R193	17:1	Cart with Boom	✔		✔		✔	25 ft (7.6 m)
16R196	17:1	Cart with Boom	✔		✔		✔	35 ft (10.7 m)
16R199	17:1	Cart with Boom	✔		✔		✔	50 ft (15.2 m)
16R202	17:1	Cart with Boom	✔		✔			---
16R205	17:1	Wall Mount (No Cart)	✔		✔		✔	25 ft (7.6 m)
16R208	17:1	Wall Mount (No Cart)	✔		✔		✔	35 ft (10.7 m)
16R211	17:1	Wall Mount (No Cart)	✔		✔		✔	50 ft (15.2 m)
16R214	17:1	Wall Mount (No Cart)	✔		✔			---

Accessories



FRP proportioner systems are approved for use in hazardous locations when the base model, all accessories, and all kits meet all wiring meet local, state, and national codes.

The following items can be purchased separately from the system to gain additional functions. Many of the items require user installation; refer to the **System Assembly** section beginning on page 20 for the required procedures.

Solvent Flush Diaphragm Pumps	
Part	**Description**
16M560	2 Gallon Solvent Flush Diaphragm Pump
16M561	5 Gallon Solvent Flush Diaphragm Pump
Solvent Flush Pressure Pots	
Part	**Description**
16M874	2 Gallon, ASME and CE-approved, Solvent Flush Pressure Pot
16M875	5 Gallon, ASME and CE-approved, Solvent Flush Pressure Pot
16M893	2 Gallon, ASME Solvent Flush Pressure Pot
16M894	5 Gallon, ASME Solvent Flush Pressure Pot
Heaters	
Part	**Description**
16N014	120V Viscon Heater, for hazardous locations
16N015	240V Viscon Heater, for hazardous locations
16N016	120V Viscon Heater, for hazardous locations and explosive atmospheres
16N017	240V Viscon Heater, for hazardous locations and explosive atmospheres
16N018	120V Viscon Heater, for non-hazardous locations
16N019	240V Viscon Heater, for non-hazardous locations

Extension Hoses	
Part	**Description**
16M712	25 ft Extension Hose Bundle for Chop Systems
16M718	25 ft Extension Hose Bundle for Internal Gel Systems
16M719	25 ft Extension Hose Bundle for External Gel Systems
55 Gallon Barrel Carts	
Part	**Description**
16M896	Cart for 55 Gallon Barrel for Cart and Boom Systems
16M897	Cart for 55 Gallon Barrel for Cart Systems
Roving Box Bracket	
Part	**Description**
16M961	Roving Box Bracket Kit
DataTrak Upgrade	
Part	**Description**
16M881	DataTrak Upgrade Kit
5 Gallon Catalyst Reservoir	
Part	**Description**
24M501	5 Gallon Catalyst Reservoir Kit

Warnings

The following warnings are for the setup, use, grounding, maintenance, and repair of this equipment. The exclamation point symbol alerts you to a general warning and the hazard symbols refer to procedure-specific risks. When these symbols appear in the body of this manual, refer back to these Warnings. Product-specific hazard symbols and warnings not covered in this section may appear throughout the body of this manual where applicable.

WARNING

FIRE AND EXPLOSION HAZARD

Flammable fumes, such as solvent and paint fumes, in **work area** can ignite or explode. To help prevent fire and explosion:

- Use equipment only in well ventilated area.
- Eliminate all ignition sources; such as pilot lights, cigarettes, portable electric lamps, and plastic drop cloths (potential static arc).
- Keep work area free of debris, including solvent, rags and gasoline.
- Do not plug or unplug power cords, or turn power or light switches on or off when flammable fumes are present.
- Ground all equipment in the work area. See **Grounding** instructions.
- Use only grounded hoses.
- Hold gun firmly to side of grounded pail when triggering into pail.
- If there is static sparking or you feel a shock, **stop operation immediately.** Do not use equipment until you identify and correct the problem.
- Keep a working fire extinguisher in the work area.

SKIN INJECTION HAZARD

High-pressure fluid from dispensing device, hose leaks, or ruptured components will pierce skin. This may look like just a cut, but it is a serious injury that can result in amputation. **Get immediate surgical treatment.**

- Engage trigger lock when not dispensing.
- Do not point dispensing device at anyone or at any part of the body.
- Do not put your hand over the fluid outlet.
- Do not stop or deflect leaks with your hand, body, glove, or rag.
- Follow the **Pressure Relief Procedure** when you stop dispensing and before cleaning, checking, or servicing equipment.
- Tighten all fluid connections before operating the equipment.
- Check hoses and couplings daily. Replace worn or damaged parts immediately.

ELECTRIC SHOCK HAZARD

This equipment must be grounded. Improper grounding, setup, or usage of the system can cause electric shock.

- Turn off and disconnect power at main switch before disconnecting any cables and before servicing equipment.
- Connect only to grounded power source.
- All electrical wiring must be done by a qualified electrician and comply with all local codes and regulations.

WARNING

TOXIC FLUID OR FUMES HAZARD

Toxic fluids or fumes can cause serious injury or death if splashed in the eyes or on skin, inhaled, or swallowed.

- Read MSDSs to know the specific hazards of the fluids you are using.
- Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines.

PERSONAL PROTECTIVE EQUIPMENT

You must wear appropriate protective equipment when operating, servicing, or when in the operating area of the equipment to help protect you from serious injury, including eye injury, hearing loss, inhalation of toxic fumes, and burns. This equipment includes but is not limited to:

- Protective eyewear, and hearing protection.
- Respirators, protective clothing, and gloves as recommended by the fluid and solvent manufacturer.

MOVING PARTS HAZARD

Moving parts can pinch, cut or amputate fingers and other body parts.

- Keep clear of moving parts.
- Do not operate equipment with protective guards or covers removed.
- Pressurized equipment can start without warning. Before checking, moving, or servicing equipment, follow the **Pressure Relief Procedure** and disconnect all power sources.

EQUIPMENT MISUSE HAZARD

Misuse can cause death or serious injury.

- Do not operate the unit when fatigued or under the influence of drugs or alcohol.
- Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See **Technical Data** in all equipment manuals.
- Use fluids and solvents that are compatible with equipment wetted parts. See **Technical Data** in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request MSDS from distributor or retailer.
- Do not leave the work area while equipment is energized or under pressure. Turn off all equipment and follow the **Pressure Relief Procedure** when equipment is not in use.
- Check equipment daily. Repair or replace worn or damaged parts immediately with genuine manufacturer's replacement parts only.
- Do not alter or modify equipment. Alterations or modifications may void agency approvals and create safety hazards.
- Use equipment only for its intended purpose. Call your distributor for information.
- Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces.
- Do not kink or over bend hoses or use hoses to pull equipment.
- Keep children and animals away from work area.
- Comply with all applicable safety regulations.

BURN HAZARD

Equipment surfaces and fluid that's heated can become very hot during operation. To avoid severe burns:

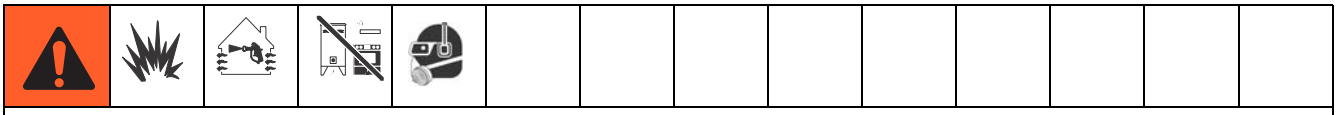
- Do not touch hot fluid or equipment.

Important Methyl Ethyl Ketone Peroxide (MEKP) Safety Information

Include this entire section on MEKP (pages 10-11) immediately AFTER the Warnings pages in any instruction manual for equipment that is used with MEKP.

MEKP is among the more hazardous materials found in commercial channels. Proper handling of the “unstable (reactive)” chemicals presents a serious challenge to the plastics industry. The highly reactive property which makes MEKP valuable to the plastics industry in producing the curing reaction of polyester resins and gel-coats also produces the hazards which require great care and caution in its storage, transportation, handling, processing and disposal.

Workers must be thoroughly informed of the hazards that may result from improper handling of MEKP, especially in regard to contamination and heat. They must be thoroughly instructed regarding the proper storage, use and disposal of MEKP and other hazardous materials used in the laminating operation.



MEKP is flammable and potentially explosive, as well as potentially damaging to the eyes and skin.

Read material manufacturer’s warnings and material MSDS to know specific hazards and precautions related to MEKP.

Contaminated MEKP can become explosive. Prevent contamination of MEKP with other materials, including but not limited to polyester overspray, polymerization accelerators and promoters, and non-stainless metals. Even small amounts of contaminates can make MEKP explosive. This reaction may start slowly, and gradually build-up heat, which can accelerate until fire or an explosion result. This process can take from seconds to days.

Heat applied to MEKP, or heat build-up from contamination reactions can cause it to reach what is called its Self-Accelerating Decomposition Temperature (SADT), which can cause fire or explosion. Spills should be promptly removed, so no residues remain. Spillage can heat up to the point of self-ignition. Dispose in accordance with manufacture’s recommendation.

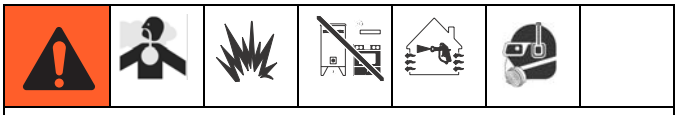
Store MEKP in a cool, dry and well-ventilated area in the original containers away from direct sunlight and away from other chemicals. It is strongly recommended that the storage temperature remain below 86° F (30° C). Heat will increase the potential for explosive decomposition. Refer to NFPA 432. Keep MEKP away from heat, sparks and open flames.

Current catalysts are premixed and do not require any diluents. Graco strongly recommends that diluents not be used. Diluents add to the possibility of contaminates entering the catalyst system. Never dilute MEKP with acetone or any solvent since this can produce an extremely shock-sensitive compound which can explode.

Use only original equipment or equivalent parts from Graco in the catalyst system (i.e.: hoses, fittings, etc.) because a hazardous chemical reaction may result between substituted parts and MEKP.

To prevent contact with MEKP, appropriate personal protective equipment, including chemically impermeable gloves, boots, aprons and goggles are required for everyone in the work area.

Polyester Resins and Gel-Coats

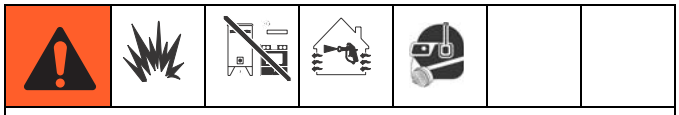


Spraying materials containing polyester resin and gel-coats creates potentially harmful mist, vapors and atomized particulates. Prevent inhalation by providing sufficient ventilation and the use of respirators in the work area.

Read the material manufacturer's warnings and material MSDSs to know specific hazards and precautions related to polyester resins and gel-coats.

To prevent contact with polyester resins and gel-coats, appropriate personal protective equipment, including chemically impermeable gloves, boots, aprons and goggles are required for everyone in the work area.

Spraying and Lamination Operations



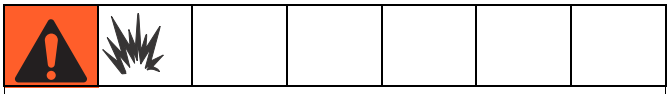
Remove all accumulations of overspray, FRP sandings, etc. from the building as they occur. If this waste is allowed to build up, spillage of catalyst is more likely to start a fire.

If cleaning solvents are required, read material manufacture's warnings and material MSDS to know specific hazards and precautions. (Graco recommends that clean-up solvents be nonflammable.)

Graco recommends that you consult OSHA Sections 1910.94, 1910.106, 1910.107 and NFPA No. 33, and NFPA No. 91 for further guidance.

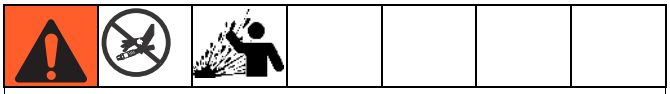
Important Two-Component Material Information

Material Self-ignition



Some materials may become self-igniting if applied too thickly. Read material manufacturer's warnings and material MSDS.

Keep Resin and Catalyst Components Separate



Cross-contamination can result in cured material in fluid lines which could cause serious injury or damage equipment. To prevent cross-contamination of the equipment's wetted parts, **never** interchange catalyst (usually MEKP) and resin (usually polyester resin or gel-coat) parts.

Changing Materials

- When changing materials, flush the equipment multiple times to ensure it is thoroughly clean.
- Always clean the fluid inlet strainers after flushing.
- Check with your material manufacturer for chemical compatibility.

Overview

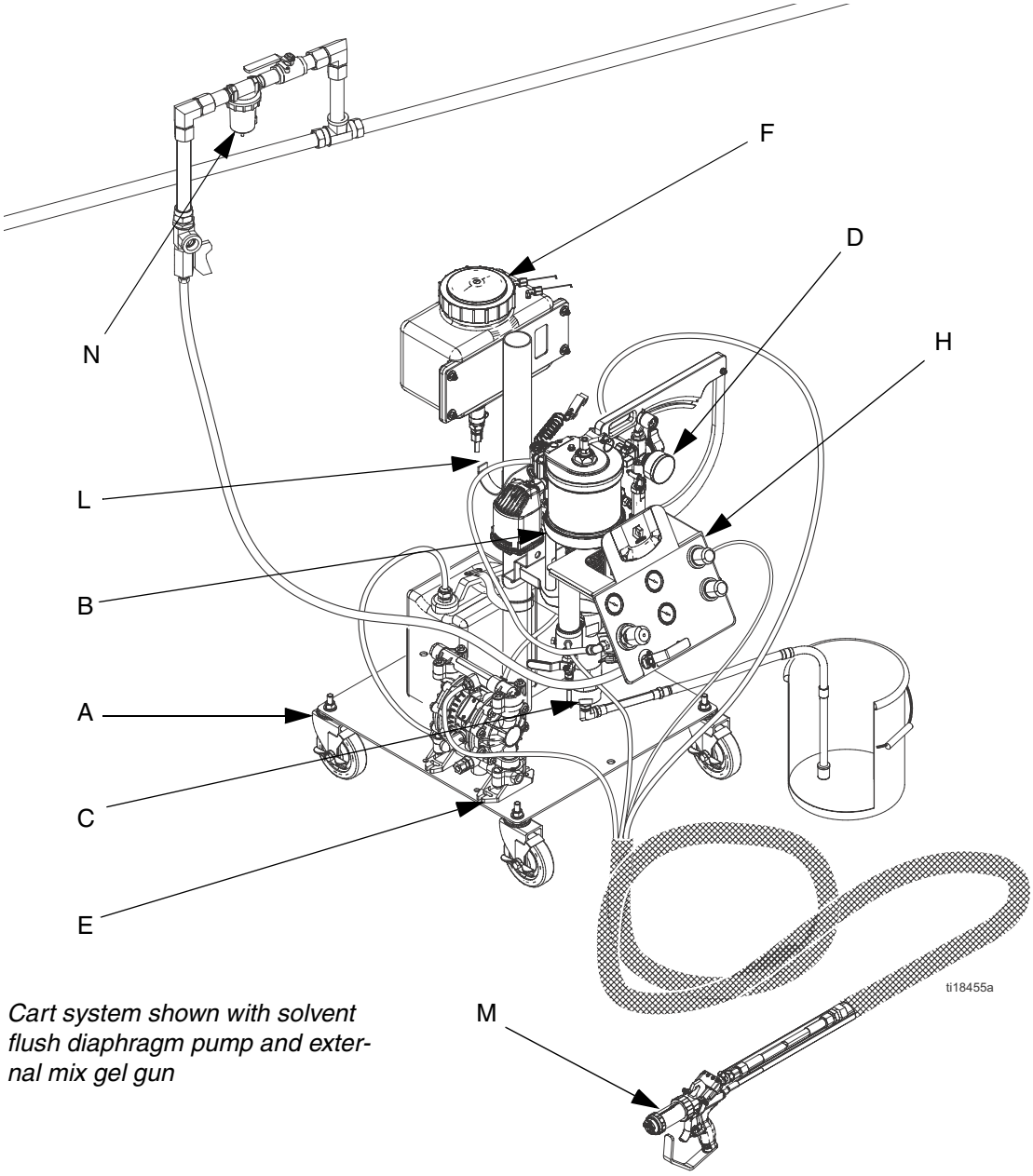
The FRP proportioner dispenses pigmented, tooling, low-VOC, and specialty gel coats, as well as polyester resin and vinyl ester chemicals. The FRP proportioner supplies the individual catalyst and resin materials, and fiberglass roving to the gun. On internal mix systems, it also supplies solvent to the gun for clearing mixed material from the gun.

Typical Applications

- Marine and watercraft
- Pool and spa
- Bath ware
- Transportation
- Corrosion prevention
- Cultured marble

FRP proportioner systems are approved for use in hazardous locations when the base model, all accessories, and all kits meet all wiring meet local, state, and national codes.

Component Identification



Cart system shown with solvent flush diaphragm pump and external mix gel gun

Key:

A Cart
B Air Motor
C Resin Displacement Pump
D Catalyst Pump
E Solvent Flush (Diaphragm Pump Option Shown, Pressure Pot Options also available)*
F Catalyst Reservoir
G Boom (not shown)
H Air Control Panel
J Heater (not shown)
K Grounding Wire (not shown)
L Hook support for resin hose coil (25 ft and 35 ft hose bundles only)
M Spray gun
N Air/Water Separator (customer supplied)

** Internal mix systems only.*

Air Control Panel

Air inlet (AA): from air line.

Air regulator 1 (AB): controls air to resin pump.

Air outlet 1 (AC): air line to resin pump.

Air pressure gauge 1 (AD): indicates air pressure to resin pump.

Air regulator 2 (AE): *for external mix guns only:* controls catalyst atomization air. *For internal mix guns only:* controls solvent flush pressure.

Air outlet 2 (AF): *for external mix guns only:* catalyst air line to spray gun. *For internal mix guns only:* to solvent pump.

Air pressure gauge 2 (AG): indicates regulator 2 air pressure.

Air regulator 3 (AH): controls Air Assist Containment™ (AAC™) air to spray gun.

Air pressure gauge 3 (AK): indicates AAC air pressure.

Air outlet 3 (AM): AAC air line to spray gun.

Air outlet 4 (AN): Chop air supply to spray gun. This outlet is plugged at the factory. Plug must be removed to install chop air.

Air Shutoff valve (AP): shuts off air to entire system.

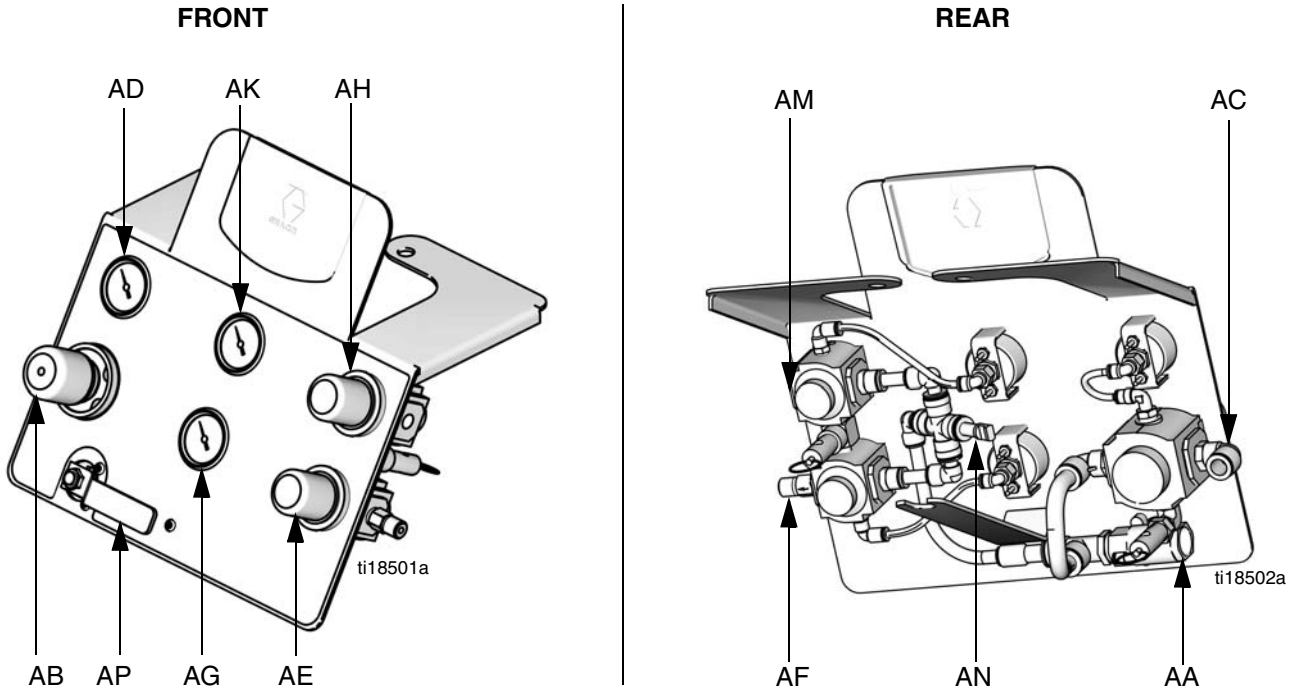


FIG. 1: Air Control Panel Components

Air Outlet Fitting Details	Internal Chop	External Chop	Internal Gel	External Gel
Air Outlet 2 (AF)	3/8 tube	1/4 tube	3/8 tube	1/4 tube
Air Outlet 3 (AM)	1/4 tube	1/8 npt	3/8 tube	1/8 npt
Air Outlet 4 (AN)	3/8 tube	3/8 tube	Plugged	Plugged

Air Motor and Resin Displacement Pump

The air motor powers the resin displacement pump which supplies resin to the spray gun.

Air inlet (M): connect air hose to the air inlet.

Fluid filter (N): removes particles from the fluid.

Pressure relief/recirculation valve (P): relieves pressure in the hose and gun.

Pressure relief/recirculation fluid outlet (P1): place container below fluid outlet or connect fluid hose and route back to the resin container, or install container below the outlet

Pressurized fluid outlet on filter (R): connect fluid hose to the 1/4 npt(f) fluid outlet reducer fitting supplied with Graco hoses.

Fluid inlet (S): connect fluid suction hose to the 3/4 npt(m) fluid inlet.

DataTrak (T) (optional): electronic monitoring for material tracking, system diagnostics, and pump runaway control. The DataTrak is located on the air control panel. See the NXT Air Motor manual for details of the DataTrak controls and indicators.

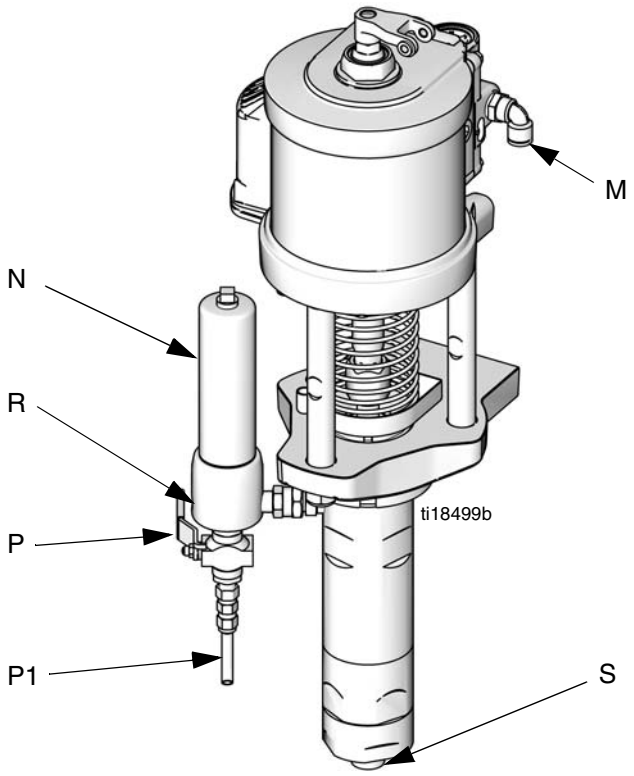


FIG. 2

Catalyst Pump

The catalyst pump supplies catalyst to the spray gun.

Pump arm (U): controls catalyst flow.

Ratio adjustment knob (V1): use to lock/unlock pump position and adjust the resin to catalyst ratio. It is easiest to adjust the ratio when the pump is at the bottom of the stroke.

Pivot point (V2): when pump is moved to adjust ratio, this point stays stationary.

High pressure relief valve (W): directs catalyst to gun or back to tank to relieve pressure. It also automatically relieves pressure if it exceeds normal working pressure.

Fluid pressure gauge (X): indicates catalyst fluid pressure.

Fluid inlet (Y): fluid inlet from the catalyst reservoir.

Fluid Inlet Ball Valve (Y2): controls flow of catalyst to the catalyst pump.

Weep line (Z): In the event of a throat seal failure, the fluid will flow into the weep line and back to the catalyst reservoir.

Fluid outlet (Z1): fluid out to the gun.

Fluid recirculation/high pressure relief (Z2): fluid outlet to the catalyst reservoir.

Low pressure relief valve (Z3): External mix systems only. Directs catalyst to gun or back to tank to relieve pressure.

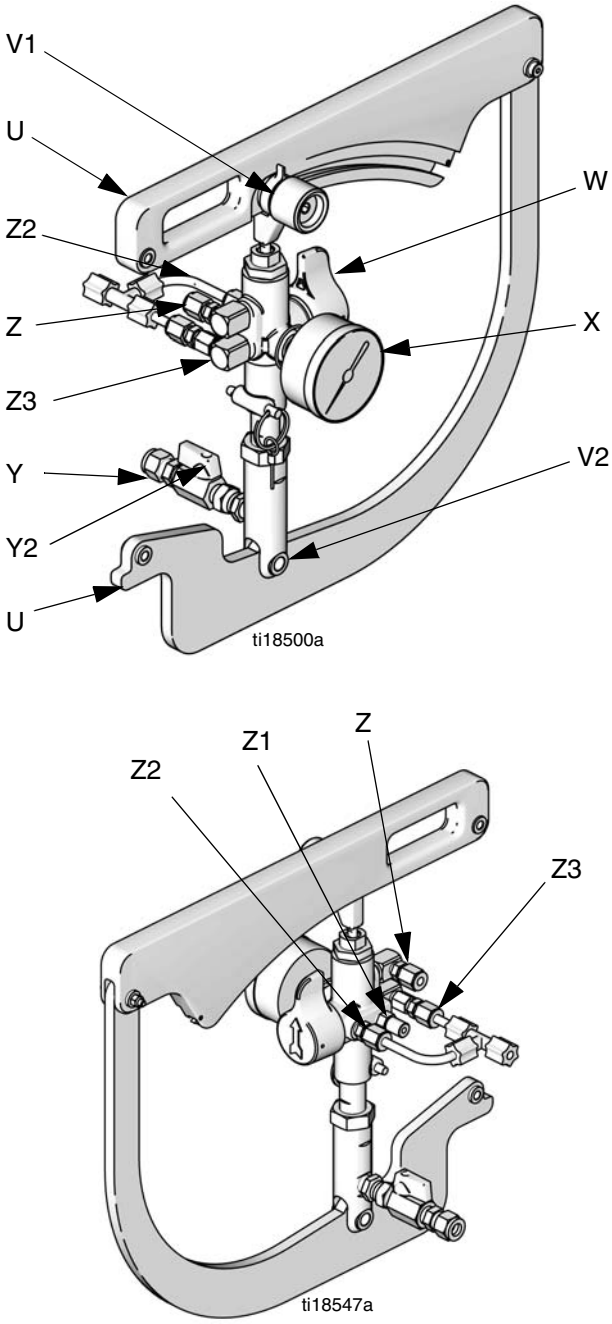


FIG. 3: Catalyst Pump Components

Solvent Flush Systems

Solvent Flush Diaphragm Pump

The solvent flush diaphragm pump provides solvent to the gun to clear out mixed fluid and prevent it from curing in the gun. See the diaphragm pump manual listed on page 3 for detailed component identification.

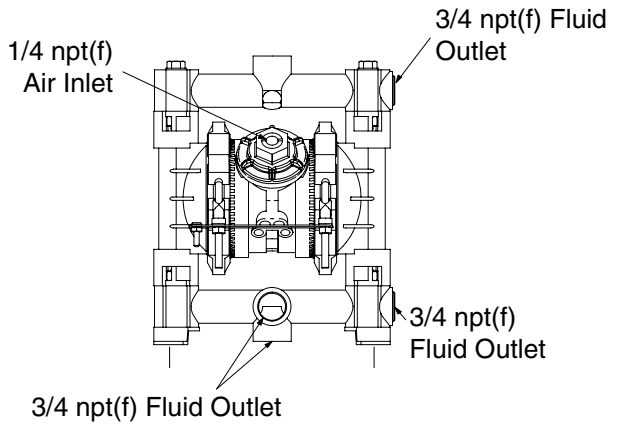
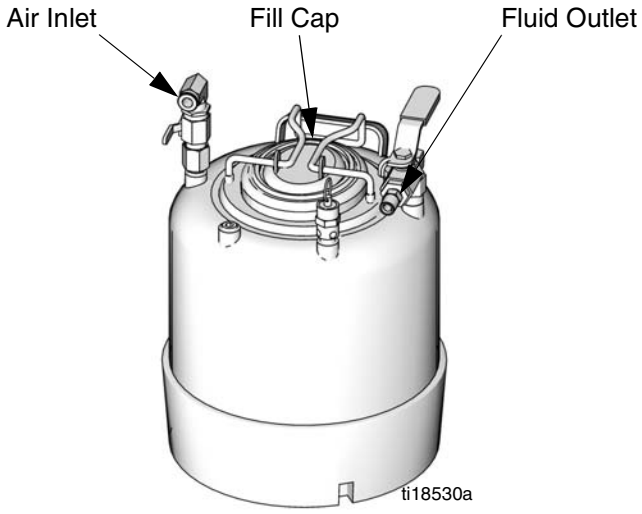


FIG. 4: Solvent Pump Components

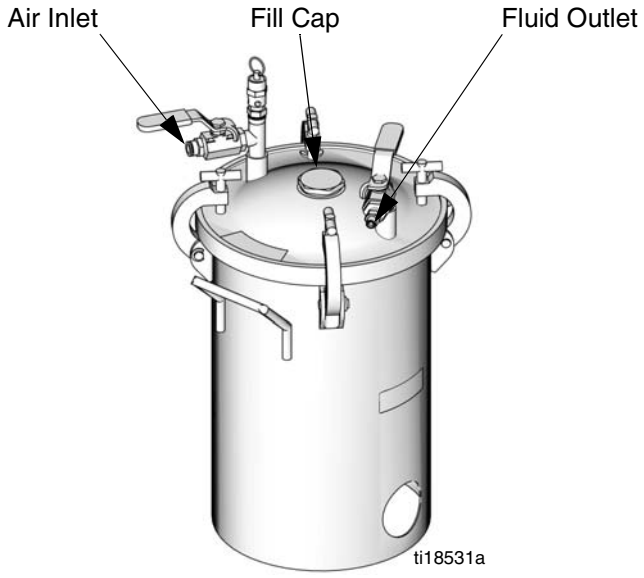
Solvent Flush ASME Pressure Pot

The pressure pot works by using the incoming air pressure to expel the solvent in the pot out of the fluid outlet. Verify supply tube is installed on fluid outlet port.



Solvent Flush ASME and CE-Approved Pressure Pot

The pressure pot works by using the incoming air pressure to expel the solvent in the pot out of the fluid outlet. See the ASME and CE-approved Pressure Pot manual listed on page 3 for detailed component identification.



Setup

To avoid fire and explosion and electric shock, FRP proportioners are not approved for use in hazardous locations unless all accessories, all kits, and all wiring meet local, state, and national codes. See **Agency Approvals** on page 3.

FRP proportioners are not approved for use in hazardous locations unless all accessories, all kits, and all wiring meet local, state, and national codes. See **Agency Approvals** on page 3.

This section provides instructions for basic system setup of the FRP proportioner. See the separate component manuals for detailed information.

Before Installation

- Have all system and component documentation available during installation.
- See component manuals for specific data on component requirements. Data presented here applies to the FRP assemblies only.
- Be sure all accessories are adequately sized and pressure-rated to meet system requirements. Accessories are available from Graco.

Component identification illustrations are only a guide for selecting and installing system components and accessories. Contact your Graco distributor for assistance in designing a system to suit your particular needs.

Location Requirements

Refer to **Dimensions**, page 77, for mounting and clearance dimensions.

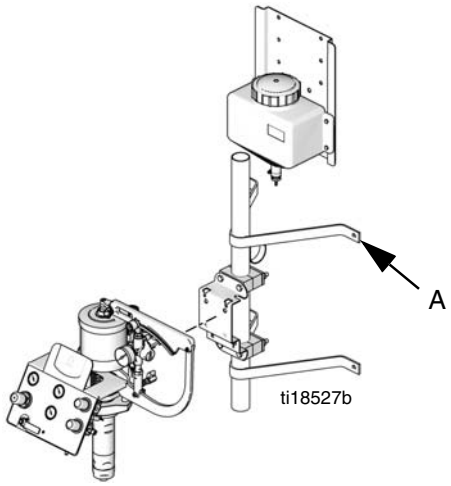
Cart Mount Systems

- Position the FRP proportioner so the air controls and catalyst ratio adjustment arm are easily accessible.
- If using a cart and boom system, ensure there is enough space overhead and surrounding the proportioner for the boom and mast to fully extend.
- Place on a flat and level surface.

System Mounting (Wall Mount Systems Only)

To reduce the risk of skin injection injury, make sure the system is depressurized before mounting any pump assembly. See the **Pressure Relief Procedure and Shutdown** on page 26.

For ease of operation and service, make sure the pump air inlet, fluid inlet, and fluid outlet ports are easily accessible. Mount the catalyst reservoir above the catalyst pump to enable gravity feed. Be sure the bracket is level.



Shown with wall mount pole 16M670

NOTICE

To prevent damage to the system caused by the system falling off the wall, be sure the wall can support the weight of the pump, bracket, hoses and accessories, and stress caused during pump operation.

1. For systems using pole 16M670:
   a. Use four bolts and washers (not supplied) to attach the two mounting brackets (A) to the wall.

b. Insert pole clamp bolts through catalyst reservoir mounting plate then each of the two upper pole clamps, then install and tighten nuts to secure mounting plate and clamps in place.

c. Insert pole clamp bolts through pumpline mounting plate then each of the two lower pole clamps, then install and tighten nuts to secure mounting plate and clamps in place.

d. Use four bolts and washers to secure catalyst reservoir to catalyst reservoir mounting plate.

e. Use four bolts and washers to secure pumpline to pumpline mounting bracket.

2. *For systems bolting directly to wall (not using a pole):*

a. Use four bolts, washers, and nuts to install catalyst reservoir mounting bracket to wall.

b. Use four bolts, washers, and nuts to install catalyst reservoir onto the catalyst reservoir mounting bracket.

c. Use four bolts, washers, and nuts to secure pumpline mounting bracket to wall.

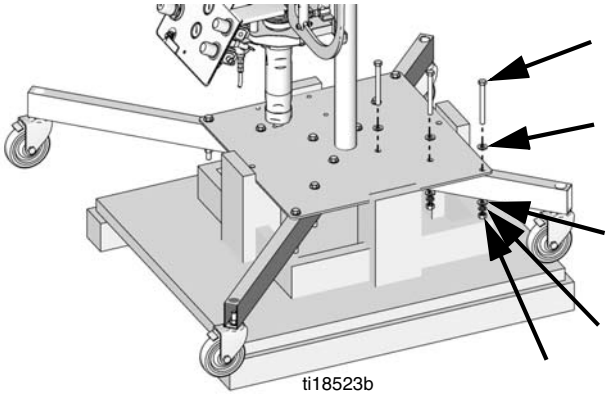
d. Use four bolts, washers, and nuts to secure pumpline to pumpline mounting bracket.

System Assembly

When the system is shipped from the factory some items may be shipped loose. Perform the following instructions to properly install each of the component items.

1. *For cart and boom systems only,* install legs:

   a. With the system still on the pallet, use the supplied hardware to install the legs onto the base as shown below. The two longer legs should be installed on the air control panel side of the machine.



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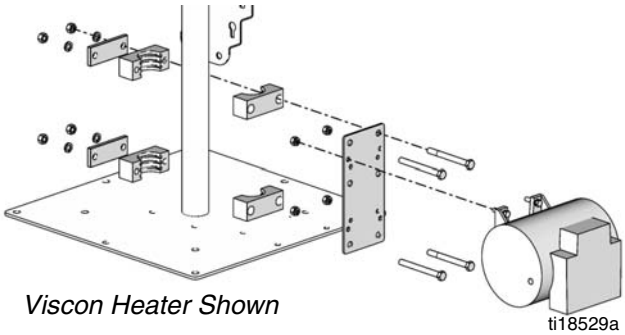
   b. Use a forklift to raise the system off of the pallet, remove the pallet, then place item directly on the floor.

2. Connect heater (if ordered):

- Improperly installed or connected equipment may create a hazardous condition that can cause fire, explosion, or electric shock.
- Refer to heater manual listed on page 3 for detailed instructions and warnings.
- You must have a qualified electrician connect heater wiring. Ensure wiring and installation comply with local electrical codes for hazardous areas.
- Wiring, wiring connections, switches, and electrical distribution panel must all meet flame-proof (explosion-proof) requirements.

   a. Use supplied hardware to install heater onto pole as shown below. Position the heater to ease hose routing between pump and heater.



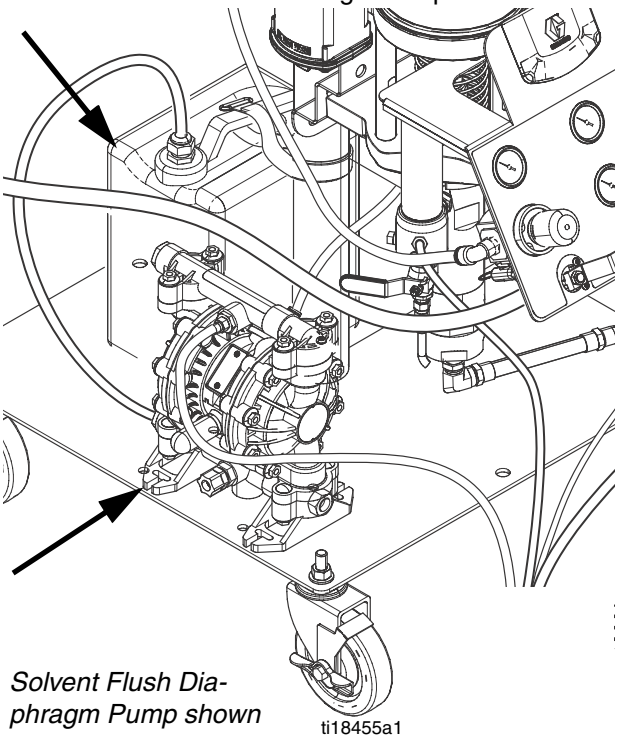
Viscon Heater Shown

ti18529a

   b. Connect heater electrical connections. See heater manual listed on page 3 for detailed instructions.

3. Install solvent flush diaphragm pump or pressure pot (if ordered).

   a. Use the supplied hardware to install the diaphragm pump or pressure pot onto the base of the cart in the mounting holes provided.



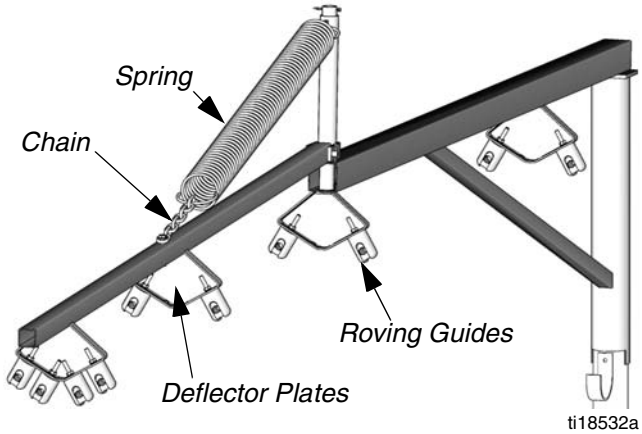
Solvent Flush Diaphragm Pump shown

ti18455a1

   b. Use supplied hardware to install solvent supply tank onto the base of the cart.

4. Install DataTrak Upgrade Kit (if ordered). Follow the detailed instructions in DataTrak manual listed on page 3.

5. Assemble the boom as shown below then slide the boom onto the system pole (if ordered).



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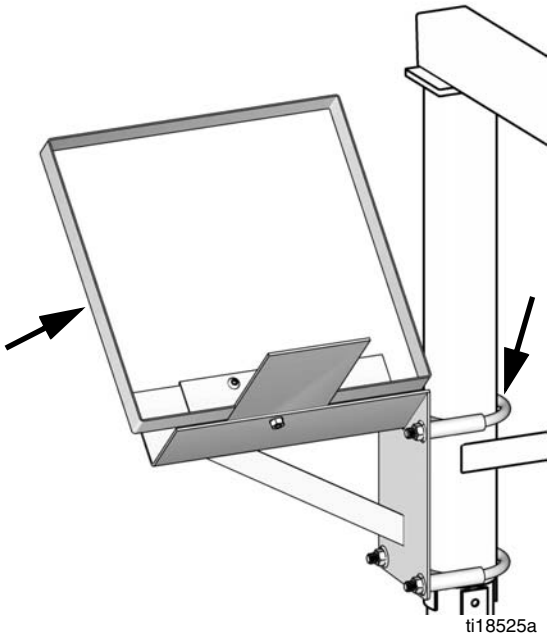
6. Use the supplied hardware to install the roving box bracket onto the pole. Install the top pole clamp above the lower arm of the boom as shown below (if ordered).



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Grounding

The equipment must be grounded to reduce the risk of static sparking and electric shock. Electric or static sparking can cause fumes to ignite or explode. Improper grounding can cause electric shock. Grounding provides an escape wire for the electric current

General Grounding Guidelines

Pump: use ground wire and clamp (supplied). Connect ground clamp to a true earth ground.

Air and fluid hoses: use only electrically conductive hoses.

Spray gun: ground through connection to a properly grounded fluid hose and pump.

Fluid supply container: follow local code.

Object being sprayed: follow local code.

Solvent pails used when flushing: follow local code. Use only conductive metal pails, placed on a grounded surface. Do not place the pail on a nonconductive surface, such as paper or cardboard, which interrupts grounding continuity.

FRP Proportioner Grounding

NOTE: All external mix proportioners come with one grounding clamp to ground the proportioner to a true earth ground. All accessories for internal mix systems come with a second grounding clamp to ground the solvent flush system to the cart.

1. Verify that the ground screw is attached and tightened securely to the air motor. Connect the other end of the ground wire to a true earth ground.

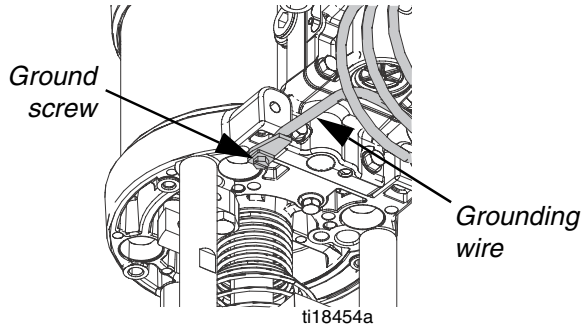


FIG. 5: Ground Wire

2. *For internal mix systems only, ground the solvent flush system.*

   a. For solvent flush diaphragm pumps only, connect one end of the second grounding clamp to the solvent pump grounding strip. See the diaphragm pump manual listed on page 3 for grounding details.

   b. Connect the other end of the grounding clamp to the cart.

3. Use an ohmmeter to verify all components are grounded to the earth ground.

4. If wall power is used to power the heater, ground electrical connection according to local codes.

5. *For cart proportioners:* Connect the other end of the second supplied grounding clamp to the cart.
   For wall proportioners: Connect the other end of the second supplied grounding clamp to a true earth ground.

Connect Fluid and Air Lines

Oil left in the system at the factory can react with catalyst and create a fire or explosion.
- Flush before first use.
- Do not add catalyst to the catalyst reservoir until the system has been flushed.

NOTE: When connecting gun hose bundle, the whip end connections in the bundle should be connected to the gun and the non-whip end connections should be connected to the proportioner. The whip end of the bundle is the end with more flexible lines. See gun manual for hose bundle connection details and individual hose identification.

Air Connections

1. Verify air line from air outlet 1 (AC) on air control panel is connected to air inlet (M) on air motor. See FIG. 2 on page 15 and FIG. 6.
2. Connect AAC air line from gun hose bundle to air outlet 3 (AM) on air control panel. See gun manual for AAC air line identification.
3. *External mix proportioners only:* Connect the supplied air tubing attached to air outlet 2 (AF) to atomized air line on gun.
   Internal mix proportioners only: Connect the supplied air tubing attached to air outlet 2 (AF) to solvent pump air inlet. See FIG. 4 on page 17.
4. *Chop systems only:* Remove plug then connect the chop air line (0.375 in. tube) in the gun hose bundle to the chop air fitting (AN) on the air control panel.
5. Verify air shutoff valve (AP) is closed (handle is vertical) then connect the air supply line to the air inlet (AA) on the air control panel.

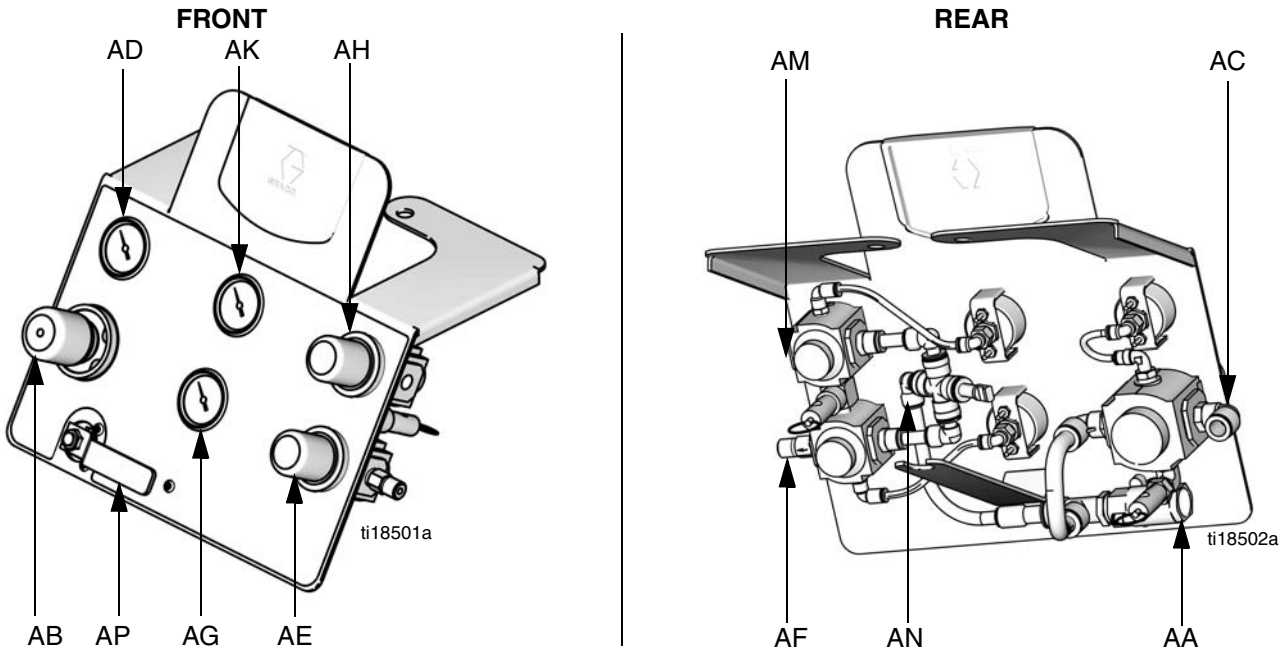


FIG. 6: Air Control Panel Components

Air Outlet Fitting Details	Internal Chop	External Chop	Internal Gel	External Gel
Air Outlet 2 (AF)	3/8 tube	1/4 tube	3/8 tube	1/4 tube
Air Outlet 3 (AM)	1/4 tube	1/8 npt	3/8 tube	1/8 npt
Air Outlet 4 (AN)	3/8 tube	3/8 tube	Plugged	Plugged

Resin Pump and Optional Heater Connections

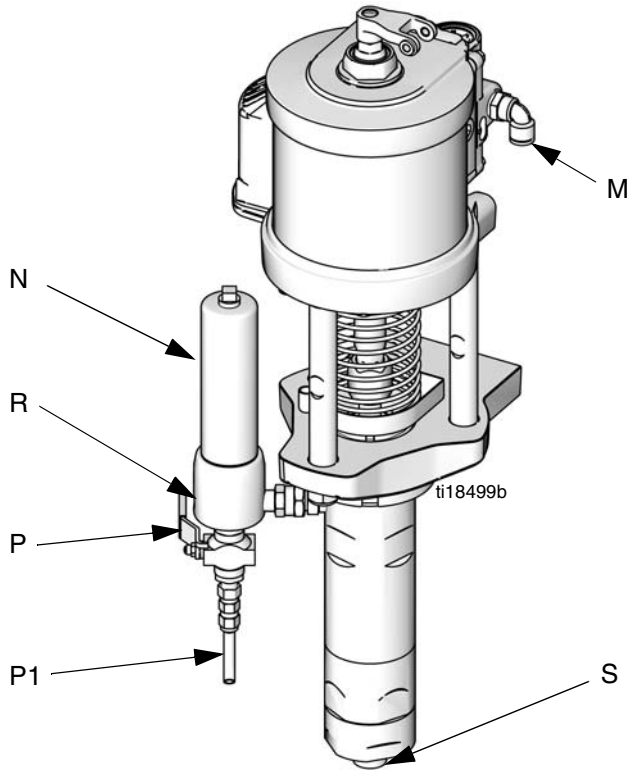


FIG. 7

6. Verify the pressure relief/recirculation valve (P) is set to pressure relief.

7. Place a waste container below the fluid outlet then remove the pump fluid inlet cap. Drain the test oil then discard.

8. Connect resin suction hose to the resin pump 3/4 nptm fluid inlet (S). Place other end of suction hose in resin container.

9. *For non-heated systems only:* Connect resin hose from the gun hose bundle to the resin pump 1/4 nptf fluid outlet (R). Reducer fitting comes with Graco hose bundle.
   For heated systems only: attach resin hose from the gun hose bundle to the heater outlet. Verify fluid hose connecting resin pump outlet to heater inlet is installed and secure. This hose is attached at the factory.

10. Connect resin recirculation hose to the pressure relief/recirculation line (P1) and route to the resin container.

Catalyst Pump Fluid Connections

NOTE: See FIG. 3 on page 16.

11. Verify the pressure relief/recirculation valve (W) is set to pressure relief (knob is horizontal).

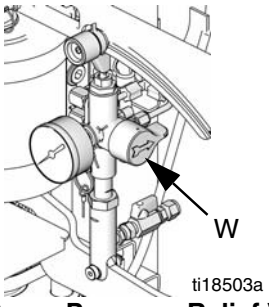


FIG. 8: Catalyst Pump Pressure Relief Valve

12. Connect the catalyst line from the gun hose bundle to the catalyst outlet (Z1).

Solvent Flush Connections (if applicable)

NOTE: See **Solvent Flush Systems** component identification on page 17 for connection locations.

13. Connect solvent air line from air control panel to diaphragm pump or pressure pot air inlet.
14. Connect solvent suction tube from solvent supply tank to solvent pump fluid inlet.
15. Connect solvent line from gun hose bundle to solvent fluid outlet.

Gun Connections

16. *For 25 ft and 35 ft hose bundles only:* Place the coil of resin hose in the hose bundle on the hook support located on the pole. Secure with the supplied rubber straps. The hook support should be inserted through the center of the hose coil.
17. Secure all connections on the whip-end of the hose bundle to the gun. See the gun manual listed on page 3 for detailed instructions.

Flush Before First Use

Oil left in the system at the factory can react with catalyst and create a fire or explosion.
- Flush before first use.
- Do not add catalyst to the catalyst reservoir until the system has been flushed.

Flush the system before first use to prevent contaminating the resin or catalyst. See page 32.

Fill Supply Tanks

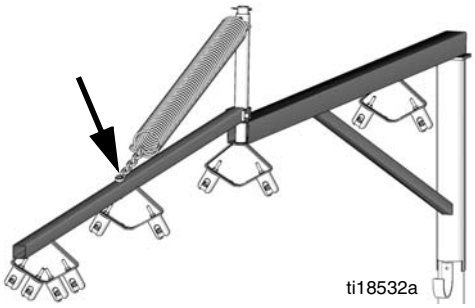
Add fluid to the solvent flush supply tank (if applicable), the catalyst supply reservoir, and the resin supply container.

Operation

Trigger Lock

Always engage the trigger lock when you stop spraying to prevent the gun from being triggered accidentally by hand or if dropped or bumped.

Boom Operation



The height of the boom can be adjusted by adjusting which link in the chain is secured to the boom arm.

Pressure Relief Procedure and Shutdown

The equipment stays pressurized until pressure is manually relieved. To help prevent serious injury from pressurized fluid such as skin injection, splashing fluid and moving parts, follow the Pressure Relief Procedure when you stop spraying and before cleaning, checking or servicing the equipment.

1. Close the main air supply ball valve.

NOTICE

Stop the pump at the bottom of its stroke to prevent fluid from drying on the exposed displacement rod and damaging the throat u-cup seals.

2. Turn the main air supply pressure regulator fully counter-clockwise.

FIG. 9

3. Disengage the trigger lock on the gun. See FIG. 10.
4. With a grounded bucket below the gun, press the gun against the side of the bucket and pull the trigger to relieve pressure in the fluid lines.

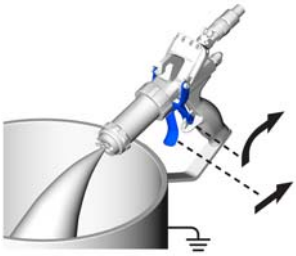


FIG. 10

5. Engage trigger lock.

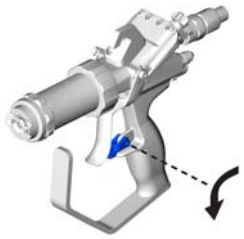


FIG. 11

6. Turn catalyst pump pressure relief/recirculation valve to the pressure relief position.

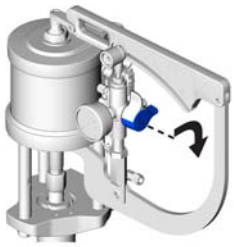


FIG. 12

7. Verify that the resin pressure relief/recirculation fluid line is routed to a grounded container, then turn the pressure relief/recirculation valve to the pressure relief position.

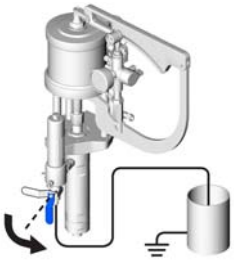


FIG. 13

8. After the pressure is fully relieved, turn the pressure relief/recirculation valve to dispense position.

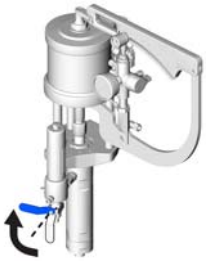
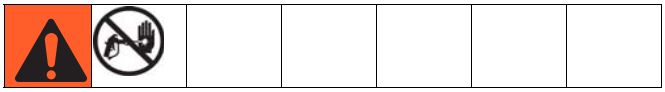


FIG. 14



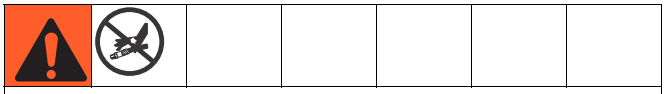
9. If you suspect the spray tip, hose, or filter is completely clogged or that pressure has not been fully relieved after following the previous steps, very slowly loosen the hose end coupling and relieve pressure gradually; then loosen completely.

10. See the gun manual listed on page 3 for shutdown and maintenance procedures.

11. Perform the scheduled maintenance items listed on page 37.

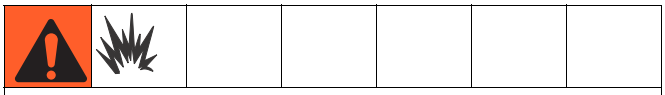
Startup

NOTE: Do not exceed 20 psi (0.14 MPa, 1.4 bar) on the material air pressure regulator until a steady material flow has been established.



To avoid overpressurization, before turning on the main air supply ensure all regulators are adjusted fully counter-clockwise so they are set to zero pressure.

1. Verify wetcup is filled with Graco Throat Seal Liquid (TSL™).
2. Ensure main air line is connected to the air control panel air inlet (AA).
3. *For internal mix proportioners only,* check solvent line:
   a. Verify gun is ready to begin operation. See gun manual.
   b. Turn shutoff valve (AP) on the air control panel to the open position.
   c. Open the air valve on the solvent pump and adjust the solvent pressure to 90 psi (0.63 MPa, 6.3 bar).
   d. Open the ball valve on the solvent pump.
   e. Open solvent knob on the gun to verify that solvent will flow out of the front of the gun through the dispense tip, then close the valve.



Oil left in the system at the factory can react with catalyst and create a fire or explosion.
- Flush before first use.
- Do not add catalyst to the catalyst reservoir until the system has been flushed.

4. If this is the first startup of the machine, perform the **Flush** procedure on page 32.
5. As desired, perform **Prime**, **Flush**, or **Spray** procedures beginning on page 29. Make sure to flush the system before first use to flush out oil used to test the equipment at the factory.

Prime

Perform this procedure upon initial system setup, whenever hoses are disconnected, if the supply hose is removed from the supply container, or if either pump is run dry. If done properly, this will prime the lines with fluid and/or remove any air bubbles from the fluid lines.

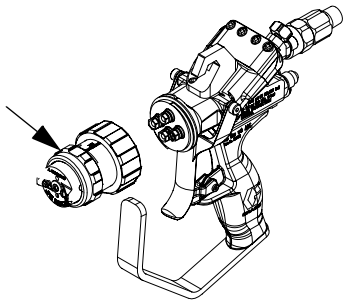
NOTE: If using an NXT air motor with DataTrak, see **DataTrak Operation**, page 35.

NOTE: *For systems with DataTrak:* When priming pumps, it is normal to get cavitation or pump runaway alarms. Clear alarms , and press again as necessary. These alarms prevent excessive pump speeds, which will damage pump packings.

1. To enable the user to better see fluid exiting each fluid port, the front end of the RS gun can be removed. This step is optional but can be very useful:

   a. Follow **Pressure Relief Procedure and Shutdown** on page 26.

   b. Remove the RS gun front end. See RS gun manual list on page 3 if desired.



Oil left in the system at the factory can react with catalyst and create a fire or explosion.
- Flush before first use.
- Do not add catalyst to the catalyst reservoir until the system has been flushed.

2. Verify the resin suction tube is in the resin supply container. Verify catalyst pump suction tube is properly connected to the catalyst reservoir and catalyst pump fluid inlet ball valve is open. Verify both the resin supply container and catalyst supply reservoir have adequate fluid levels.

Never allow the pump to run dry of the fluid being pumped. A dry pump quickly accelerates to a high speed, possibly damaging itself and causing overpressurization and equipment rupture. If your pump accelerates quickly or is running too fast, stop it immediately and check the fluid supply. If the supply container is empty and air has been pumped into the lines, refill the container and prime the pump and the lines with fluid, or flush and leave it filled with a compatible solvent. Be sure to eliminate all air from the fluid system.

3. *Units with runaway protection only:* enable the prime/flush function by pushing the prime/flush button on the DataTrak.

4. Verify the pressure relief/recirculation valves on the catalyst pump is set to the pressure relief/recirculation position.

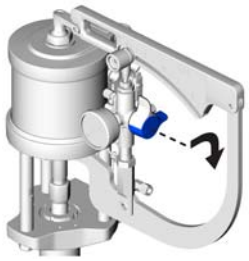


FIG. 15

5. Verify the pressure relief/recirculation valves on the resin pump is set to the pressure relief/recirculation position.

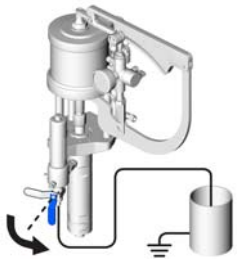


FIG. 16

6. Turn the main air supply pressure regulator fully counter-clockwise to relieve pressure and set to zero pressure. See FIG. 17.

7. Turn the main air supply ball valve to the open position. See FIG. 17.

8. Slowly turn the main air supply pressure regulator clockwise until the pump starts to move and will change-over by itself. Never turn past 20 psi (0.14 MPa, 1.4 bar). See FIG. 17.

FIG. 17

9. Turn the resin pump pressure relief/recirculation valve to the dispense position.

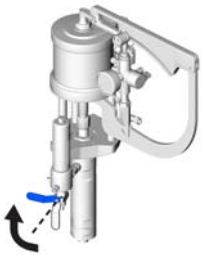


FIG. 18

10. Turn the catalyst pump pressure relief/recirculation valve to the dispense position.

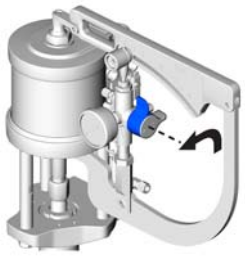


FIG. 19

11. Disengage the trigger lock on the gun. See FIG. 20.

To reduce the risk of exposure to the dispensed material mist, when performing the following step use a pail lid with a hole to dispense through. Seal around hole and gun with a rag to prevent splash back.

To reduce the risk of skin injection, be careful to keep fingers away from front of gun.

To reduce the risk of fire and explosion, use a grounded pail.

12. With a grounded bucket below the gun, press the gun against the side of the bucket and pull the trigger to dispense. Continue dispensing until air-free fluid is dispensed from both ports on the front of the gun. See FIG. 20. The pump air pressure may need to increase slightly until the material begins to flow.

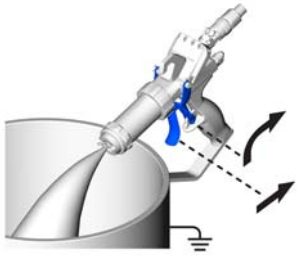


FIG. 20

13. Turn the main air supply ball valve to the closed position.

FIG. 21

14. Turn the catalyst pump pressure relief/recirculation valve to the pressure relief position. This will relieve any built up pressure.

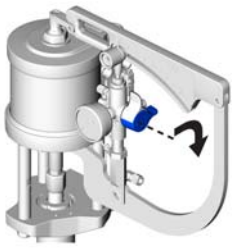


FIG. 22

15. Verify that the resin pressure relief/recirculation fluid line is routed to a grounded container, then turn the pressure relief/recirculation valve to the pressure relief position.

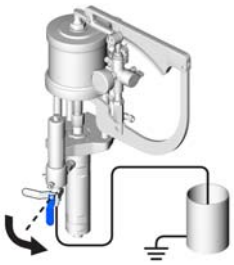


FIG. 23

16. *Units with runaway protection only:* disable the prime/flush function by pushing the prime/flush button on the DataTrak.

17. Engage gun trigger lock.

18. If the front end of the gun was removed, apply grease to o-rings and front of gun to prevent material from curing or sticking to it, then install gun front end.

Flush

Oil left in the system at the factory can react with catalyst and create a fire or explosion.

- Flush before first use.
- Do not add catalyst to the catalyst reservoir until the system has been flushed.

To reduce the risk of fire and explosion and skin injection injury, only use a solvent compatible with the system wetted parts, the resin, and the catalyst.

Flush the system:

- Before first use
- When changing fluids
- Before repairing equipment
- Before fluid dries or settles out in a dormant pump (check the pot life of catalyzed fluids)
- Before storing the pump.

Flush at the lowest pressure possible. Flush with a fluid that is compatible with the fluid you are pumping and with the wetted parts in your system. Check with your fluid manufacturer or supplier for recommended flushing fluids and flushing frequency.

NOTE: Always flush catalyst pump separately by hand (remove pin from upper control arm and hand pump).

1. Remove all fluid inlet, recirculation, and weep lines from the catalyst reservoir and insert in a container filled with a compatible solvent.

2. Remove the resin pump fluid supply and recirculation lines from the resin supply container and insert in a container filled with a compatible solvent.

NOTICE

To prevent accidentally mixing resin and catalyst in the solvent container, there must be two solvent containers used, with the resin pump fluid lines inserted in one and the catalyst pump fluid lines inserted in the other.

3. With the fluid lines in the two separate solvent containers, perform the **Prime** procedure at the lowest pressure possible. While performing this procedure, leave the fluid supply, recirculation, and supply lines in the solvent containers.

Spray

NOTE: If using an NXT air motor with DataTrak, see **DataTrak Operation**, page 35, for instructions on using the DataTrak counter/totalizer.

Prior to production use, spray onto a clean piece of paper until all system settings are adjusted to optimize the spray pattern.

Perform this full procedure whenever the gun has been unused for an extended period of time, such as overnight. After performing this full procedure, spraying can be performed intermittently as desired by simply pulling the trigger and utilizing the trigger lock to prevent accidental triggering.

1. *If this is the first time starting up the system, if fluid lines have been disconnected, if the fluid supply line has been removed from the supply container, or if either pump has been run dry,* perform **Prime** procedure on page 29.
2. Turn the main air supply ball valve to the closed position.
3. Turn the main air supply pressure regulator fully counterclockwise.

FIG. 24

4. Turn the resin pump pressure relief/recirculation valve to the dispense position.

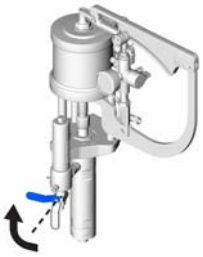


FIG. 25

5. Turn the catalyst pump pressure relief/recirculation valve to the dispense position. See FIG. 26.
6. Bring catalyst pump fluid outlet line to dispensing pressure (see FIG. 26):
   a. Remove pin connecting upper catalyst pump arm to air motor rod then manually stroke the pump until the catalyst pressure gauge shows:
   External mix systems: 30-40 psi (0.21-0.28 MPa, 2.1-2.8 bar).
   Internal mix systems: 300-400 psi (2.1-2.8 MPa, 21-28 bar).
   b. Insert pin to connect upper catalyst pump arm to air motor.

FIG. 26

7. Turn the main air supply ball valve to the closed position. See FIG. 27.

8. Slowly turn the main air supply pressure regulator clockwise until the main air supply pressure gauge reads the desired pressure. See FIG. 27.

FIG. 27

9. Disengage trigger lock on the gun. See FIG. 28.

10. Pull trigger to begin dispensing. See FIG. 28.

FIG. 28

NOTE: In the following step, to minimize catalyst overspray, use as little catalyst atomization air pressure as possible to achieve desired spray pattern. See the spray gun manual for instructions.

11. If the spray pattern has not already been set up to perform as desired, see RS gun manual for detailed instructions for how to optimize the spray pattern, including adjusting the AAC air pressure at the system or gun, and adjusting the catalyst atomization air.

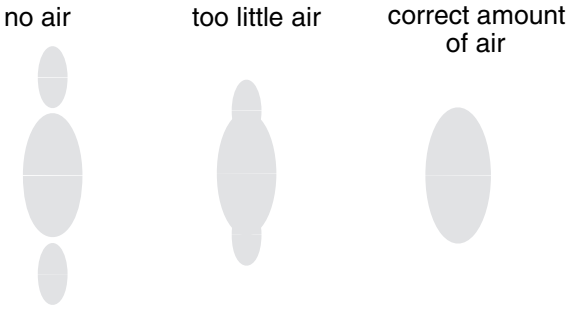


FIG. 29: AAC Air Adjustment

12. After all pressure adjustments are made, spray a final test shot on a clean piece of paper. This shot should be approximately 5 ft long. Check desired gel times and uniformity of curing.

13. *For internal mix proportioners only:* When finished spraying engage trigger lock then point the gun into a waste container and use the solvent knob on the gun to move solvent through the gun to flush the gun.

14. *For external mix proportioners only:* When finished spraying, wipe the tip of the gun with a clean rag with solvent to remove any mixed material.

15. If necessary, use a brush to remove cured material from front of the gun.

16. *If finished spraying for an extended period of time:* Follow **Pressure Relief Procedure and Shutdown** on page 26.

DataTrak Operation

For DataTrak installation instructions, see NXT Air motor for FRP manual.

Controls and Indicators

NOTE: See FIG. 30. The display (Y) will turn off after 1 minute of inactivity in Run mode or 3 minutes in Setup mode. Press any key to wake up the display. DataTrak will continue to count cycles when display is off.

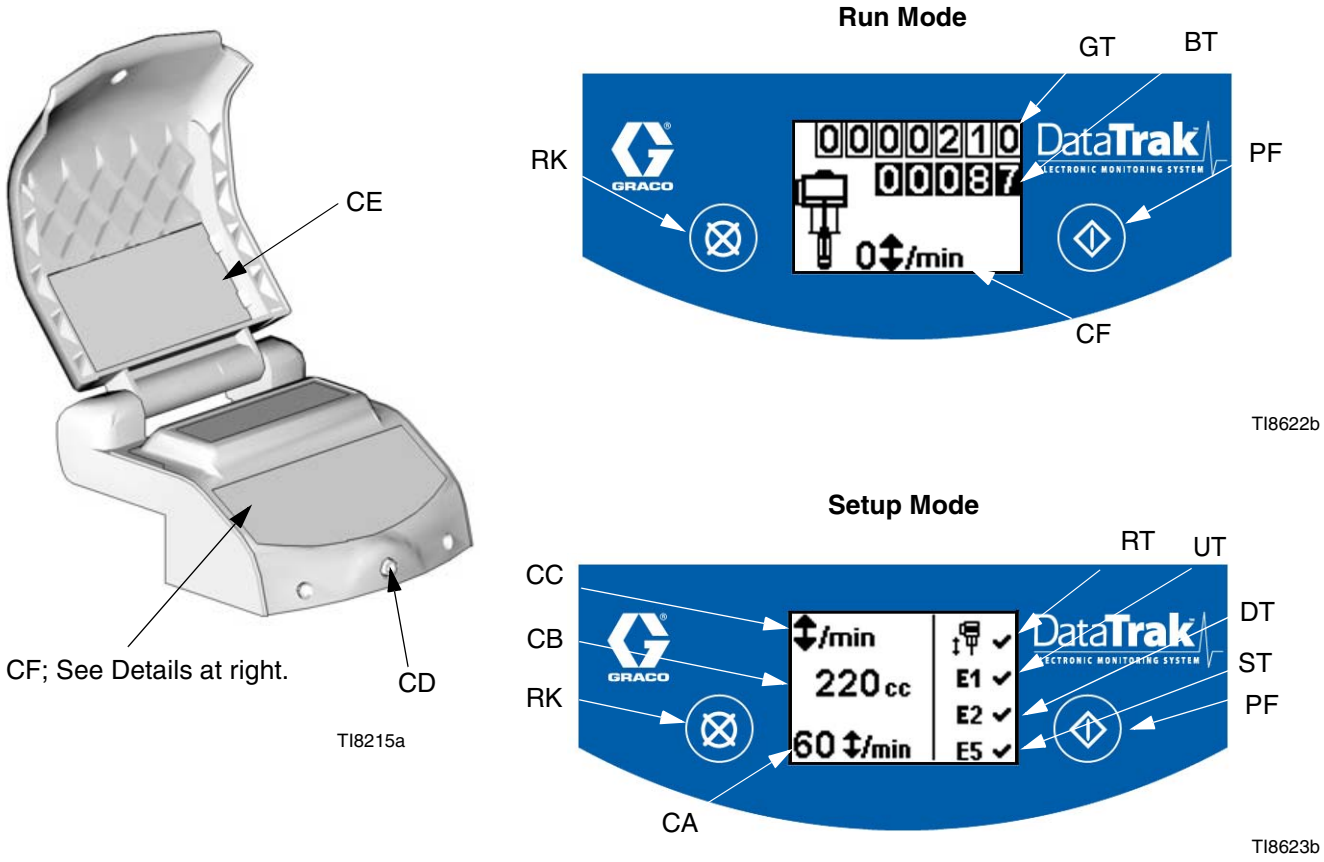


FIG. 30. DataTrak Controls and Indicators

Key:

CA Runaway Limit, in cycles per minute (user settable; 00=OFF)
CB Lower Displacement (user settable)
CC Flow Rate Units (user settable to /min, gpm [US], gpm [Imperial], oz/min [US], oz/min [Imperial], l/min, or cc/min)
CD LED (fault indicator when lit)
CE Diagnostic Reference Card (see TABLE 1, page 40)
CF Display
PF Prime/Flush Key (Enables Prime/Flush mode. While in Prime/Flush mode, runaway protection is disabled and the batch totalizer (BT) will not count.)
RK Reset Key (Resets faults. Press and hold for 3 seconds to clear the batch totalizer.)
CF Cycle/Flow Rate
BT Batch Totalizer
GT Grand Totalizer
RT Runaway Toggle (enable/disable)
UT E1 Error Option (enable/disable)
DT E2 Error Option (enable/disable)
ST E5 Error Option (enable/disable)

Setup Mode

1. See FIG. 30. Press and hold for 5 seconds until Setup menu appears.
2. To enter settings for runaway, lower size, and flow rate units, and to enable runaway, E1, E2, and E5 error options, press to change the value, then to save the value and move the cursor to the next data field.

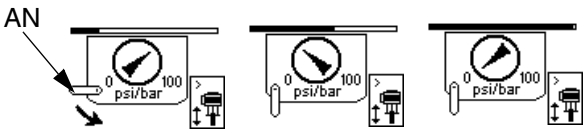
NOTE: When runaway, E1, E2, and E5 error options are enabled, a ✓ will appear on the setup screen. See FIG. 30.

3. Move the cursor to the E5 error enable option field, then press once more to exit Setup mode.

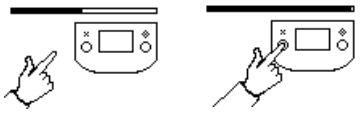
Run Mode

Runaway Monitor

1. See FIG. 30. If pump runaway occurs, the runaway solenoid will actuate, stopping the pump. The LED (CD) will flash and the display (CF) will indicate a runaway condition (see Table 1).
2. To reset runaway monitor, close shutoff valve (AP). Wait for air to completely bleed off the air motor before going to the next step. The screen will change to indicate this, as shown below.



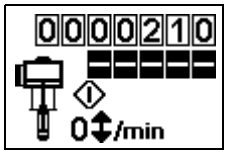
3. Press to clear the diagnostic code and reset the runaway solenoid.



4. Open shutoff valve (AP) to restart pump.

NOTE: To disable runaway monitoring, go to setup mode and set runaway value (CA) to 0 (zero) or disable (RT) (see FIG. 30).

Prime/Flush

1. See FIG. 30. To enter Prime/Flush mode, press any key to wake up the display, then press . The Prime/Flush symbol will appear flashing in the display and the LED will flash 

2. While in Prime/Flush mode, runaway protection is disabled and the batch totalizer (BT) will not count.
3. To exit Prime/Flush mode, press any key to wake up the display, then press . The Prime/Flush symbol will disappear from the display and the LED will stop flashing.

Counter/Totalizer

See FIG. 30. The last digit of the batch totalizer (BT) represents tenths of gallons or liters. To reset the totalizer, press any key to wake up the display, then press and hold for 3 seconds.

NOTE: If flow rate is set to /min, both totalizers will display the number of pump cycles.

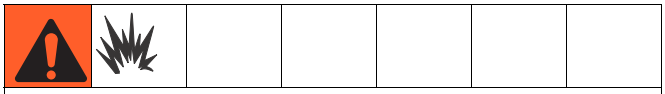
Maintenance

Task	Schedule
Inspect pump wetcup and fill with TSL and remove any particles or residue	Daily
Inspect hoses for wear or damage and replace immediately if found	Weekly
Remove catalyst reservoir filter and clean with solvent	As needed
Replace catalyst reservoir filter	As needed
Flush system	As needed

Components

See component manuals listed on page 3 for maintenance schedules and procedures for each component.

Replace DataTrak Module Battery or Fuse



The battery and fuse must be replaced in a non-hazardous location.

If you are using an NXT pump with DataTrak and need to replace the battery or fuse, see the NXT Air Motor manual for instructions.

Troubleshooting

Follow **Pressure Relief Procedure and Shutdown** on page 26 before checking or servicing the equipment.

Problems

Try the recommended solutions in the order given for each problem, to avoid unnecessary repairs. See

Catalyst Pump

See **Catalyst Slave Pumps** parts illustration on page 62 for parts identification.

Problem	Cause	Solution
Pressure loss on up stroke.	Worn transfer housing seal.	Replace transfer housing seal.
	Worn transfer housing seat.	Replace transfer housing.
Pressure loss on up stroke and down stroke.	Worn weep seals.	Replace weep cartridge.
	Blow off valve spring is wearing out.	Replace blow off valve.
	Loose fittings on spray gun and/or hoses.	Tighten fittings on spray gun and hoses.
	Scratched piston rod.	Replace piston rod.
Pressure not building on up stroke.	Damaged transfer housing seat.	Replace transfer housing.
Pressure not building on down stroke.	Scratched inlet valve.	Replace inlet valve.
Leakage from cartridge housing.	Loose cartridge housing.	Tighten cartridge housing.
	Loose bearing.	Tighten bearing.
Pressure being relieved through relief valve or check valve at a low pressure.	Relief valve or check valve has a weak spring.	Replace relief valve or check valve.
Pump will not prime.	Fluid inlet ball valve is closed.	Open fluid inlet ball valve.

Resin Pump

See **Resin Pumplines** on page 57 for parts identification.

Problem	Cause	Solution
Does not operate.	Valve closed or clogged.	Clear air line; increase air supply. Check that valves are open.
	Fluid hose or gun obstructed.	Clean hose or gun.*
	Dried fluid on displacement rod.	Clean rod; always stop pump at bottom of stroke; keep wet-cup filled with Throat Seal Liquid (TSL).
	Air motor parts dirty, worn, or damaged.	Clean or repair air motor. See air motor manual.
	Runaway error on DataTrak tripped (if DataTrak installed)	See **DataTrak Operation-Runaway Monitor**, page 36.

Problem	Cause	Solution
Output low on both strokes.	Air line restricted or air supply inadequate. Valves closed or clogged.	Clear air line; increase air supply. Check that valves are open.
	Fluid hose/gun obstructed.	Clear hose or gun*.
	Air motor icing.	See air motor manual for instructions.
	Exhausted fluid supply.	Refill and prime pump.
	Worn piston packings.	Replace.
	Open or worn intake valve.	Clear or service intake valve.
Pump output low on only one stroke.	Held open or worn ball check valves.	Check and repair.
	Worn piston packings.	Replace.
No output.	Improperly installed ball check valves.	Check and repair.
Pump operates erratically.	Exhausted fluid supply.	Refill and reprime pump.
	Held open or worn ball check valves.	Check and repair.
	Worn piston packing.	Replace.
	Suction tube too restrictive, causing pump to cavitate	Use larger diameter tube
Erratic accelerated speed.	Fluid supply exhausted, clogged suction.	Refill supply and prime pump. Clean suction tube.
	High viscosity fluid.	Reduce viscosity; increase fluid temperature, reduce flow rate by using smaller tip.
	Open or worn piston valve or seal.	Clear piston valve; replace seal.
	Open or worn intake valve.	Clear or service intake valve.
Runs sluggishly.	Possible icing.	See air motor manual for instructions.
	Filler material clumping causing extra friction on rods and seals.	Flush pump and replace packings.
Cycles or fails to hold pressure at stall.	Worn check valves or seals.	Service lower. See lower manual for instructions.
Air bubbles in fluid.	Loose suction line.	Tighten. Use compatible liquid thread sealant or PTFE tape on connections.
Poor finish or irregular spray pattern.	Incorrect fluid pressure at gun.	See gun manual; read fluid manufacturer's recommendations.
	Fluid is too thin or too thick.	Adjust fluid viscosity; read fluid manufacturer's recommendations.
	Dirty, worn, or damaged spray gun.	Service spray gun. See spray gun manual.

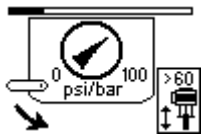
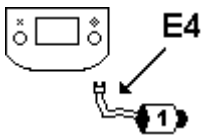
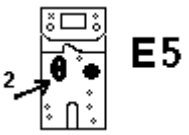
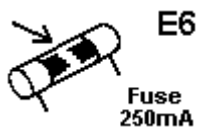
* *To determine if fluid hose or gun is obstructed, follow* ***Pressure Relief Procedure and Shutdown****, page 26. Disconnect fluid hose and place a container at pump fluid outlet to catch any fluid. Turn on air power just enough to start pump. If pump starts, the obstruction is in fluid hose or gun.*

DataTrak Diagnostics

DataTrak can diagnose several problems with the pump. When the monitor detects a problem, the LED (CD, FIG. 30) will flash and a diagnostic code will appear on the display. See Table 1.

To acknowledge the diagnosis and return to the normal operating screen, press once to wake up the display, and once more to clear the diagnostic code screen.

Table 1: Diagnostic Codes

Symbol	Code	Code Name	Diagnosis	Cause
		Runaway	Pump running faster than set runaway limit.	• Increased air pressure. • Increased fluid output. • Exhausted fluid supply.
	E-1	Diving Up	Leak during upstroke.	Worn piston valve or packings.
	E-2	Diving Down	Leak during downstroke.	Worn intake valve.
	E-3	Low Battery	Battery voltage too low to stop runaway.	Low battery. To replace battery, see manual 311238.
	E-4	Service Component 1	Problem with stopping runaway.	• Damaged solenoid. • Damaged valve carriage.
	E-4	Disconnected Solenoid	Solenoid is disconnected.	• Solenoid unplugged. • Damaged solenoid wires.
	E-5	Service Component 2	Problem with sensing valve movement.	• Sensors unplugged. • Sensors mounted incorrectly. • Damaged sensors. • Damaged valve carriage.
	E-6	Blown Fuse	Fuse is blown.	• Faulty solenoid or solenoid wiring. • Extreme temperatures (above 140°F [60°C]).

Repair

- To reduce the risk of fire and explosion, repair procedures must be performed in a non-hazardous location. Move system to non-hazardous location before performing any repair procedure.
- Follow **Pressure Relief Procedure and Shutdown** on page 26 before checking or servicing the equipment.
- To prevent contact with fluids, flush the system prior to disassembling any components that contain catalyst or resin.

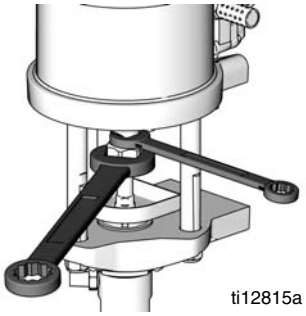
General Information

- Reference numbers and letters in parentheses in the text refer to the callouts in the figures and the parts drawing.
- Always use Genuine Graco Parts and Accessories, available from your Graco distributor. If you supply your own accessories, be sure they are adequately sized, pressure rated, and made of materials compatible with your system.

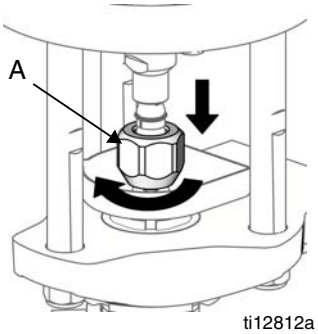
Disconnect the Displacement Pump

See manual 3A2313 for displacement pump service and parts information.

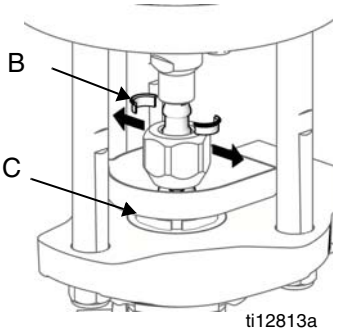
1. Flush the pump, see page 32.
2. Stop the pump in the middle of the stroke.
3. Relieve the pressure, see page 26.
4. Disconnect the air supply and fluid hoses.
5. Hold the flats of the air motor piston rod with a wrench. Use another wrench to loosen the coupling nut.


ti12815a

6. Lower the coupling nut (A) enough to remove the coupling collars (B), and then remove the coupling nut (A). Use a magnet to aid removing the two collars (B).

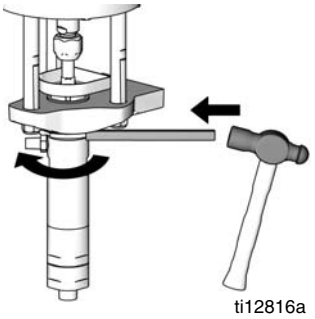


ti12812a



ti12813a

7. Pull up on TSL reservoir (C) to remove.
8. Use a hammer and brass rod to loosen the jam nut. Unscrew the jam nut as far as possible.
9. Protect hands with a rag then unscrew the displacement pump by hand and place on work bench.

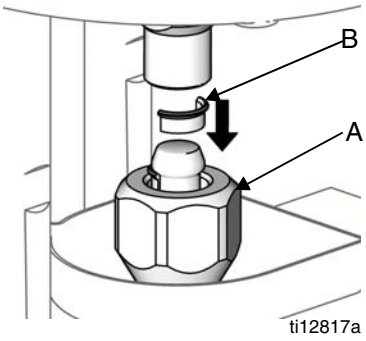

ti12816a

Threads are very sharp. Use a rag to protect hands when hand turning or carrying the pump.

10. See displacement pump manual 3A2313 for pump service procedures and parts information.

Reconnect the Displacement Pump

1. Disconnect air supply from air motor.
2. Hand-turn the displacement pump into the adapter plate.
3. Install coupler spring guard and TSL reservoir.
4. Hold the air motor piston rod up with one hand. With your other hand, put the coupling nut (A) on the displacement rod.
5. Put the coupling collars (B) into the coupling nut (A) so large flanges point upward.



6. Gently let the air motor piston rod drop onto the displacement rod. Hand tighten the coupling nut (A).
7. Screw the displacement pump into the adapter plate (D) until the cylinder top is flush with the top of the adapter plate.

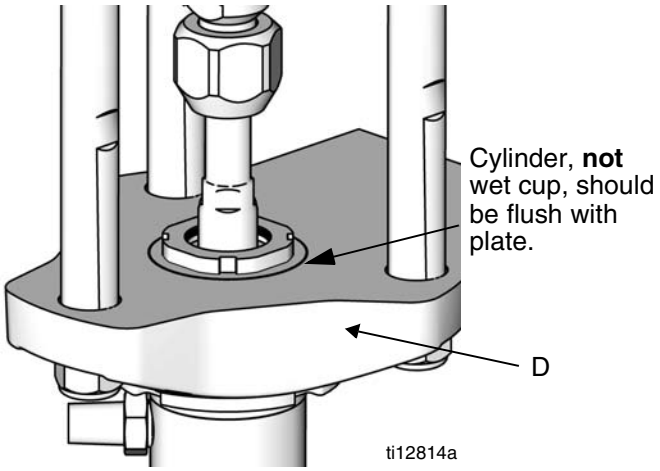
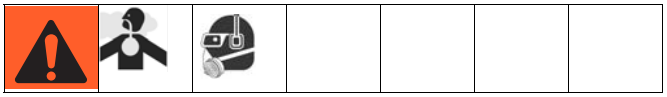


FIG. 31. Align cylinder and adapter plate.

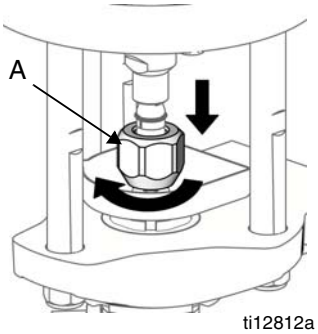
8. Align fluid outlet as shown and tighten the jam nut.
9. Align the TSL reservoir (C) and push it down into place.
10. Hold the flats of the motor rod with a wrench. Use another wrench to tighten the coupling nut (A). Torque to 75-80 ft-lb (102-108 N•m).
11. Reconnect air supply to motor.

Disconnect the Air Motor

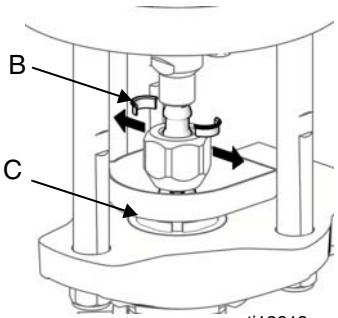
See manual 3A2315 for air motor service and parts information. See FIG. 32 on page 45.



1. Relieve the pressure, see page 26.
2. Disconnect main air supply line from the inlet on the air control panel (AE).
3. Disconnect grounding wire.
4. Disconnect items from the air motor:
   a. Note location of all air hoses connected to air motor then disconnect the hoses from the air motor.
   b. Remove top pin (AA) connecting upper catalyst pump arm to air motor, then remove bolts (AB) connecting lower catalyst pump arm to air motor then remove catalyst pump and control arms assembly (AC).
   c. Remove two bolts (AD) securing air control panel to air motor then remove air control panel (AE).
5. Hold the flats of the air motor piston rod with a wrench. Use another wrench to loosen the coupling nut (A). Lower the coupling nut (A) enough to remove the coupling collars (B), then remove the coupling nut (A).



ti12812a



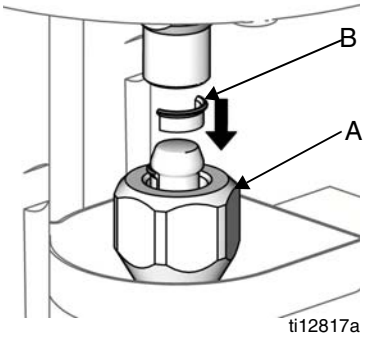
ti12813a

6. Use a 23 mm socket to remove the tie rod nuts (AF).
7. Use a 13 mm socket to loosen the top two screws (AG) that secure air motor to mounting bracket (AH).
8. Lift up on the air motor to remove it. The tie rods (AJ) will remain attached to the air motor.
9. Use a socket on the flats of the tie rods (AJ) to remove them from the bottom of the air motor.
10. See air motor manual 3A2315 for repair procedures and parts information.

Reconnect the Air Motor

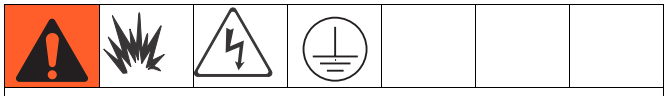
See FIG. 32 on page 45.

1. Screw the tie rods (AJ) into the bottom of the air motor. With a wrench on the flats of the tie rods, torque to 50-55 ft-lb (68-75 N•m).
2. Align the tie rods (AF) with the holes in the pump adapter. Carefully lower the air motor into place.
3. Attach the tie rod nuts (AF) to tie rods then torque to 50-60 ft-lb (68-81 N•m).
4. Install and tighten the screws (AG) that secure air motor to mounting bracket (AH).
5. Install coupler spring guard and TSL reservoir.
6. With coupling collars (B) in place, hand tighten the coupling nut, then torque to 75-80 ft-lb (102-108 N•m).



ti12817a

7. Connect the air and fluid hoses.



The equipment must be grounded to reduce the risk of static sparking and electric shock. Electric or static sparking can cause fumes to ignite or explode. Improper grounding can cause electric shock. Grounding provides an escape wire for the electric current

8. Attached grounding wire to true earth ground.

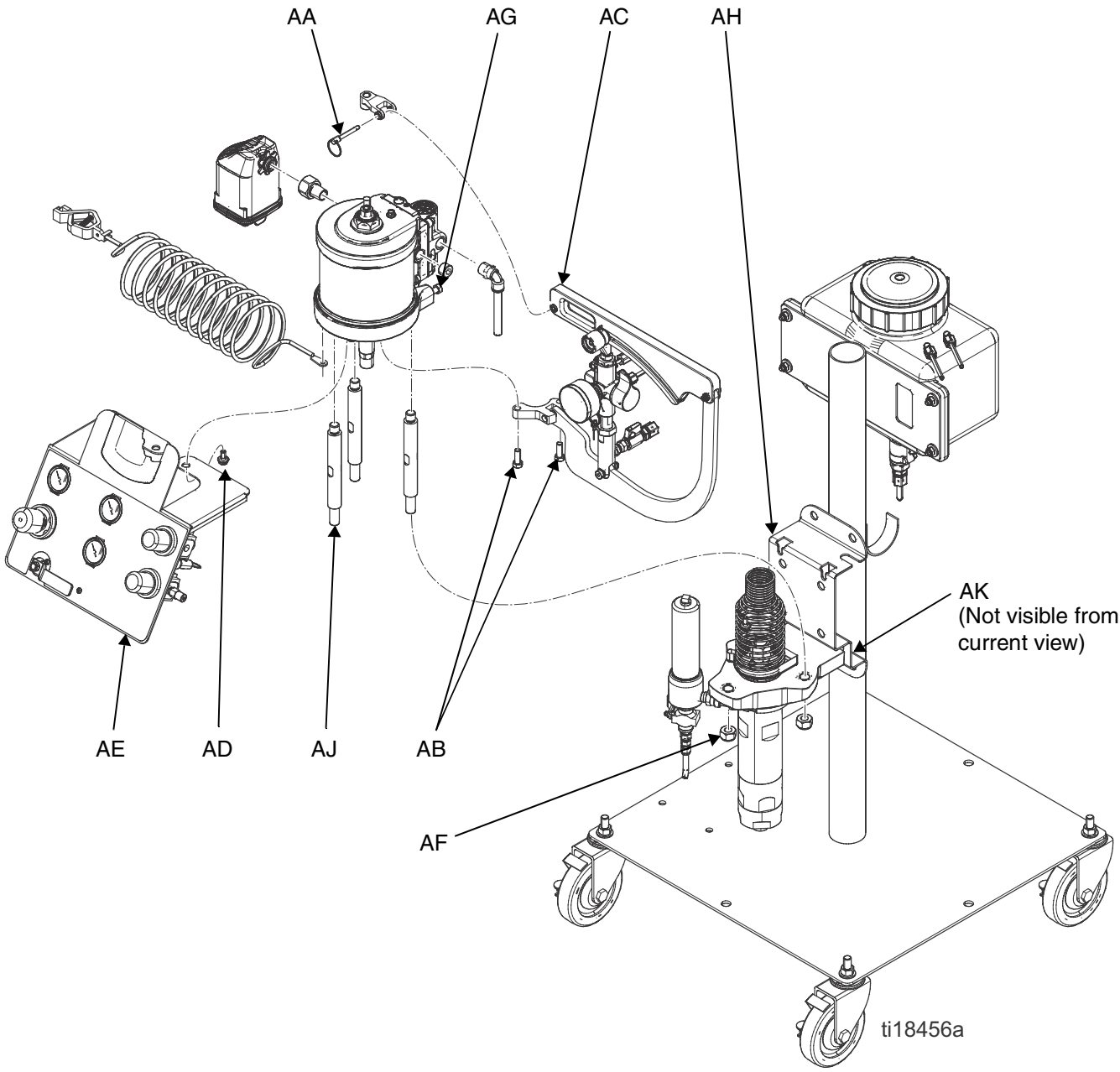

AA
AG
AC
AH
AK
(Not visible from
current view)
AE
AD
AJ
AB
AF
ti18456a

FIG. 32

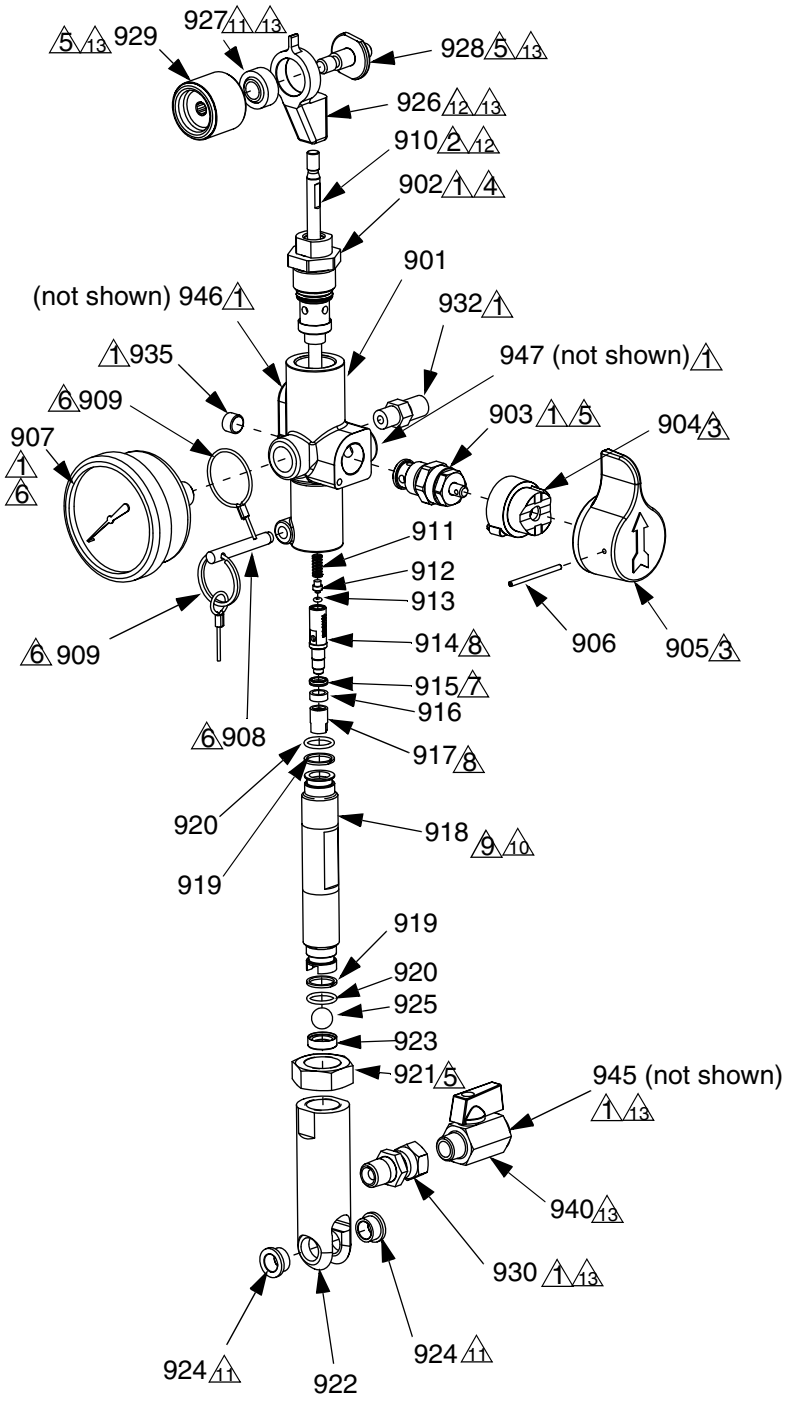
Replace Pumpline

This procedure is only needed if the entire pumpline will be replaced. If just installing repair parts in the air motor and/or displacement pump, see **Disconnect the Displacement Pump** on page 41, **Disconnect the Air Motor** on page 44, displacement pump manual 3A2313, and air motor manual 3A2315.

1. Flush the pump, see page 32.
2. Relieve the pressure, see page 26.
3. Disconnect main air line from air panel (AE).
4. Disconnect items from the air motor, see FIG. 32 on page 45:
   a. Note location of all air hoses connected to air motor then disconnect the hoses from the air motor.
   b. Remove top pin (AA) connecting upper catalyst pump arm to air motor, then remove bolts (AB) connecting lower catalyst pump arm to air motor then remove catalyst pump and control arms assembly (AC).
   c. Remove two bolts (AD) securing air control panel to air motor then remove air control panel (AE).
5. Disconnect the air and fluid hoses.
6. Disconnect the ground wire.
7. Use a socket to loosen the two screws (AG) connecting the air motor to the mounting bracket (AH).
8. Use a socket to remove the two screws (AK) securing the displacement pump to the mounting bracket.
9. Lift up on the pumpline to slide pumpline out of bracket.
10. Reassembly is reverse of assembly.

Repair Catalyst Pump

1. Flush the pump, see page 32.
2. Relieve the pressure, see page 26.
3. Remove top pivot knob securing catalyst pump to upper control arm.
4. Remove bolt securing catalyst pump to lower control arm then remove catalyst pump.
5. Disassemble catalyst pump. See FIG. 33 on page 47 for detailed disassembled view.
6. Discard items that need to be replaced then reassemble the pump using the new parts. See FIG. 33 on page 47 for detailed disassembled view along with torque specifications.



1 Apply pipe sealant to threads.

2 Apply adhesive lubricant to mating surfaces or threads.

3 Apply grease to mating surfaces or threads.

4 Torque to 240 in-lb (27.1 N•m).

5 Torque to 225-275 in-lb (25.4-31.1 N•m).

6 Loop large end of lanyard over gauge prior to assembling gauge. Attach small end of lanyard to split ring on pin.

7 Note orientation of u-cup.

8 Torque to 30-50 in-lb (3.4-5.6 N•m).

9 Clean cylinder inner diameter with soft cloth or equivalent, prior to assembly.

10 Hand tighten cylinder (918) and bottom out to housing (901). Back-off cylinder (918) less than 1/2 turn. Assembly pin (908).

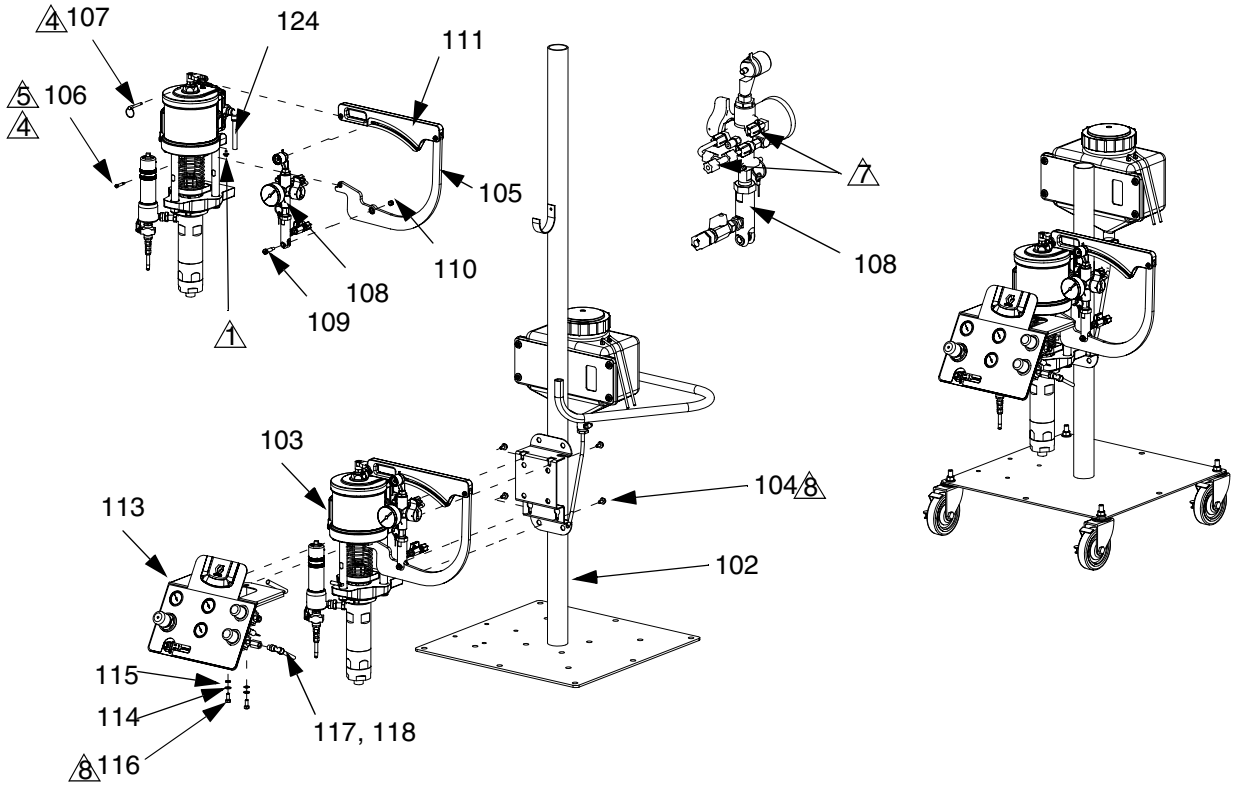
11 Press fit bearings.

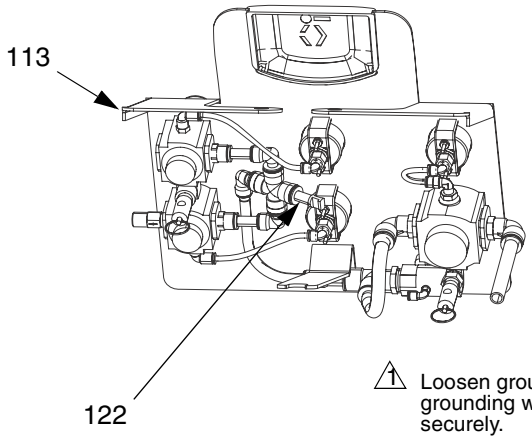
12 Torque piston rod (910) to top link (926) to 80-100 in-lb (9.0-11.3 N•m).

FIG. 33: Catalyst Pump Disassembly and Assembly Details

System Parts

Systems





1 Loosen grounding lug locknut and washer, insert grounding wire into slot in lug and tighten locknut securely.

4 Apply grease to outer diameter, not to the threads.

5 Torque to 45-55 ft-lb (61-75 N•m).

7 Connect tubing to catalyst pump.

8 Torque to 20-30 ft-lb (27-41 N•m).

Systems

See **Models** table on page 4 for detailed descriptions of each system number to identify which system number you have. To make reading the table below easier, find your system number in the left-most column then place a straight-edge (such as the edge of a blank piece of paper) below that row of the table. If necessary, use a second straight-edge vertically in the table to identify the part number of each item used in the system.

Ref.	Part	Description	16R001	16R002	16R003	16R004	16R005	16R006	16R009	16R012	16R015	16R018	16R021	16R024	16R027
102	16N169	WALL MOUNT KIT (No Cart)													
	---	CART, for use with boom			1	1						1	1	1	1
	---	CART	1	1			1	1	1	1	1				
103	W13DFC	PUMP, FRP, 13:1	1	1	1	1			1	1	1	1	1	1	1
	W17CFS	PUMP, FRP, 17:1					1	1							
104	111799	SCREW, cap, hex head	4	4	4	4	4	4	4	4	4	4	4	4	4
105	16M787	HARNESS, slave linkage	1	1	1	1	1	1	1	1	1	1	1	1	1
106	119999	BOLT, shoulder	1	1	1	1	1	1	1	1	1	1	1	1	1
107	24M092	PIN, quick release, 1.5 x 0.25	1	1	1	1	1	1	1	1	1	1	1	1	1
108	24E230	PUMP, slave, external mix	1		1		1		1	1	1	1	1	1	1
	24C480	PUMP, slave, internal mix		1		1		1							
109	120476	BOLT, shoulder, 5/16	1	1	1	1	1	1	1	1	1	1	1	1	1
110	111040	NUT, lock, insert, nylock, 5/16	1	1	1	1	1	1	1	1	1	1	1	1	1
111	16M564	LABEL, ratio, 13:1, FRP	1	1	1	1			1	1	1	1	1	1	1
	16M565	LABEL, ratio, 17:1, FRP					1	1							
112◆	16H994	SUPPORT, boom, mast			1	1						1	1	1	1
113	---	PANEL, air control	1	1	1	1	1	1	1	1	1	1	1	1	1
114	108788	WASHER, flat	2	2	2	2	2	2	2	2	2	2	2	2	2
115	555630	WASHER, 5/16 external tooth lock	2	2	2	2	2	2	2	2	2	2	2	2	2
116	105328	SCREW, cap, hex head	2	2	2	2	2	2	2	2	2	2	2	2	2
117	114109	FITTING, elbow, male, swivel	1		1		1		1	1	1	1	1	1	1
	121141	FITTING, elbow, swivel, 3/8t 1/4mnpt		1		1		1							
118	C12508	TUBING, nylon, round		3		3		3							
119◆	238909	WIRE, grounding	1	1	1	1	1	1	1	1	1	1	1	1	1
121	54139	TUBE, nylon, round	3	3	3	3	3	3	3	3	3	3	3	3	3
122	124071	PLUG, fitting, push-to-connect	1	1			1	1	1	1	1	1	1	1	1
123◆	16M588	HOSE, bundle, 25 ft external gel	1				1					1			
	16M587	HOSE, bundle, 25 ft internal gel		1				1							
	16M586	HOSE, bundle, 25 ft chop			1	1									
	16M591	HOSE, bundle, 35 ft external gel							1				1		
	16M590	HOSE, bundle, 35 ft internal gel													
	16M589	HOSE, bundle, 35 ft chop													
	16M585	HOSE, bundle, 50 ft external gel								1				1	
	16M584	HOSE, bundle, 50 ft internal gel													
	16M583	HOSE, bundle, 50 ft chop													
124◆	258970	GUN, external mix, chop, with cutter			1										
	258840	GUN, external mix, gel	1				1		1	1		1	1	1	
	258971	GUN, internal mix, chop, with cutter				1									
	258853	GUN, internal, gel		1				1							
125◆	16M736	SUPPLY HOSE, 55 gallon	1	1	1	1	1	1	1	1	1	1	1	1	1
126◆	16M810	KIT, tie strap & quick start & TSL	1	1	1	1	1	1	1	1	1	1	1	1	1
127◆	---	BOOM			1	1						1	1	1	1
151◆ ▲	16D136	LABEL, warnings	1	1	1	1	1	1	1	1	1	1	1	1	1

Ref.	Part	Description	16R030	16R033	16R036	16R039	16R044	16R047	16R050	16R053	16R056	16R059	16R062	16R065	16R068	16R071	16R074	16R079	16R082	16R085	16R088	16R091	16R094	16R097
102	16N169	WALL MOUNT KIT (No Cart)	1	1	1	1								1	1	1	1							
	---	CART, for use with boom								1	1	1	1									1	1	1
	---	CART					1	1	1									1	1	1	1			
103	W13DFC	PUMP, FRP, 13:1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	W17CFS	PUMP, FRP, 17:1																						
104	111799	SCREW, cap, hex head	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
105	16M787	HARNESS, slave linkage	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
106	119999	BOLT, shoulder	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
107	24M092	PIN, quick release, 1.5 x 0.25	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
108	24E230	PUMP, slave, external mix	1	1	1	1												1	1	1	1	1	1	1
	24C480	PUMP, slave, internal mix					1	1	1	1	1	1	1	1	1	1	1							
109	120476	BOLT, shoulder, 5/16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
110	111040	NUT, lock, insert, nylock, 5/16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
111	16M564	LABEL, ratio, 13:1, FRP	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	16M565	LABEL, ratio, 17:1, FRP																						
112◆	16H994	SUPPORT, boom, mast								1	1	1	1									1	1	1
113	---	PANEL, air control	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
114	108788	WASHER, flat	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
115	555630	WASHER, 5/16 external tooth lock	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
116	105328	SCREW, cap, hex head	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
117	114109	FITTING, elbow, male, swivel	1	1	1	1												1	1	1	1	1	1	1
	121141	FITTING, elbow, swivel, 3/8t 1/4mnpt					1	1	1	1	1	1	1	1	1	1	1							
118	C12508	TUBING, nylon, round					3	3	3	3	3	3	3	3	3	3	3							
119◆	238909	WIRE, grounding	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
121	54139	TUBE, nylon, round	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
122	124071	PLUG, fitting, push-to-connect	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1							
123◆	16M588	HOSE, bundle, 25 ft external gel	1																					
	16M587	HOSE, bundle, 25 ft internal gel								1				1										
	16M586	HOSE, bundle, 25 ft chop																			1			
	16M591	HOSE, bundle, 35 ft external gel		1																				
	16M590	HOSE, bundle, 35 ft internal gel					1				1				1									
	16M589	HOSE, bundle, 35 ft chop																1				1		
	16M585	HOSE, bundle, 50 ft external gel			1																			
	16M584	HOSE, bundle, 50 ft internal gel						1				1				1								
	16M583	HOSE, bundle, 50 ft chop																	1				1	
124◆	258970	GUN, external mix, chop, with cutter																1	1		1	1	1	
	258840	GUN, external mix, gel	1	1	1																			
	258971	GUN, internal mix, chop, with cutter																						
	258853	GUN, internal, gel					1	1		1	1	1		1	1	1								
125◆	16M736	SUPPLY HOSE, 55 gallon	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
126◆	16M810	KIT, tie strap & quick start & TSL	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
127◆	---	BOOM								1	1	1	1									1	1	1
151◆ ▲	16D136	LABEL, warnings	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

◆ *Item not shown.*

▲ *Replacement Danger and Warning labels, tags and cards are available at no cost.*

Ref.	Part	Description	16R100	16R103	16R106	16R109	16R114	16R117	16R120	16R123	16R126	16R129	16R132	16R135	16R138	16R141	16R144	16R149	16R152	16R155	16R158	16R161	16R164	16R167
102	16N169	WALL MOUNT KIT (No Cart)	1	1	1	1								1	1	1	1							
	---	CART, for use with boom									1	1	1								1	1	1	1
	---	CART					1	1	1	1								1	1	1				
103	W13DFC	PUMP, FRP, 13:1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1							
	W17CFS	PUMP, FRP, 17:1																1	1	1	1	1	1	1
104	111799	SCREW, cap, hex head	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
105	16M787	HARNESS, slave linkage	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
106	119999	BOLT, shoulder	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
107	24M092	PIN, quick release, 1.5 x 0.25	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
108	24E230	PUMP, slave, external mix	1	1	1	1												1	1	1	1	1	1	1
	24C480	PUMP, slave, internal mix					1	1	1	1	1	1	1	1	1	1	1							
109	120476	BOLT, shoulder, 5/16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
110	111040	NUT, lock, insert, nylock, 5/16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
111	16M564	LABEL, ratio, 13:1, FRP	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1							
	16M565	LABEL, ratio, 17:1, FRP																1	1	1	1	1	1	1
112◆	16H994	SUPPORT, boom, mast									1	1	1								1	1	1	1
113	---	PANEL, air control	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
114	108788	WASHER, flat	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
115	555630	WASHER, 5/16 external tooth lock	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
116	105328	SCREW, cap, hex head	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
117	114109	FITTING, elbow, male, swivel	1	1	1	1												1	1	1	1	1	1	1
	121141	FITTING, elbow, swivel, 3/8t 1/4mnpt					1	1	1	1	1	1	1	1	1	1	1							
118	C12508	TUBING, nylon, round					3	3	3	3	3	3	3	3	3	3	3							
119◆	238909	WIRE, grounding	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
121	54139	TUBE, nylon, round	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
122	124071	PLUG, fitting, push-to-connect																1	1	1	1	1	1	1
123◆	16M588	HOSE, bundle, 25 ft external gel																			1			
	16M587	HOSE, bundle, 25 ft internal gel																						
	16M586	HOSE, bundle, 25 ft chop	1							1				1										
	16M591	HOSE, bundle, 35 ft external gel																1				1		
	16M590	HOSE, bundle, 35 ft internal gel																						
	16M589	HOSE, bundle, 35 ft chop		1			1				1				1									
	16M585	HOSE, bundle, 50 ft external gel																	1				1	
	16M584	HOSE, bundle, 50 ft internal gel																						
	16M583	HOSE, bundle, 50 ft chop			1			1				1				1								
124◆	258970	GUN, external mix, chop, with cutter	1	1	1																			
	258840	GUN, external mix, gel																1	1		1	1	1	
	258971	GUN, internal mix, chop, with cutter					1	1		1	1	1		1	1	1								
	258853	GUN, internal, gel																						
125◆	16M736	SUPPLY HOSE, 55 gallon	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
126◆	16M810	KIT, tie strap & quick start & TSL	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
127◆	---	BOOM									1	1	1								1	1	1	1
151◆ ▲	16D136	LABEL, warnings	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

◆ *Item not shown.*

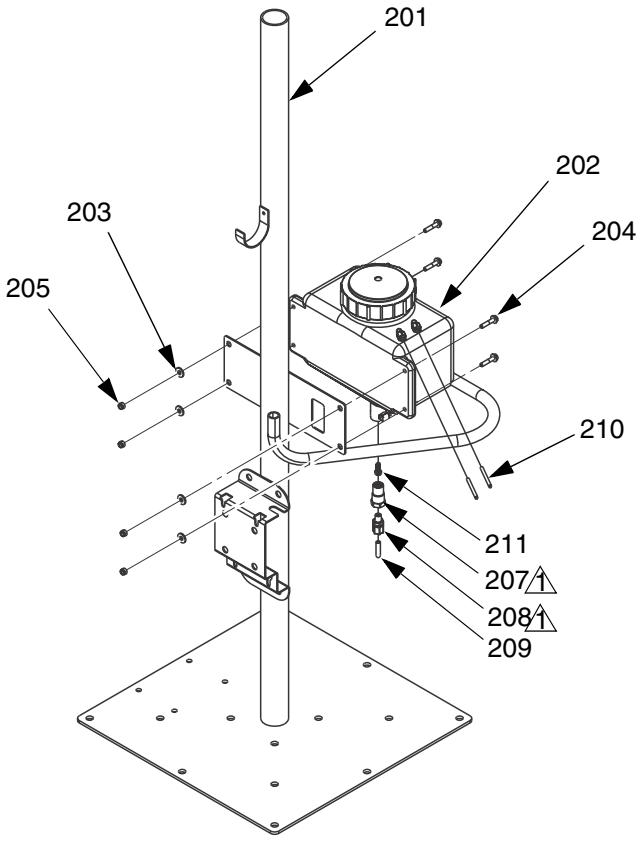
▲ *Replacement Danger and Warning labels, tags and cards are available at no cost.*

Ref.	Part	Description	16R170	16R173	16R176	16R179	16R184	16R187	16R190	16R193	16R196	16R199	16R202	16R205	16R208	16R211	16R214
102	16N169	WALL MOUNT KIT (No Cart)	1	1	1	1								1	1	1	1
	---	CART, for use with boom								1	1	1	1				
	---	CART					1	1	1								
103	W13DFC	PUMP, FRP, 13:1															
	W17CFS	PUMP, FRP, 17:1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
104	111799	SCREW, cap, hex head	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
105	16M787	HARNESS, slave linkage	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
106	119999	BOLT, shoulder	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
107	24M092	PIN, quick release, 1.5 x 0.25	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
108	24E230	PUMP, slave, external mix	1	1	1	1											
	24C480	PUMP, slave, internal mix					1	1	1	1	1	1	1	1	1	1	1
109	120476	BOLT, shoulder, 5/16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
110	111040	NUT, lock, insert, nylock, 5/16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
111	16M564	LABEL, ratio, 13:1, FRP															
	16M565	LABEL, ratio, 17:1, FRP	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
112◆	16H994	SUPPORT, boom, mast								1	1	1	1				
113	---	PANEL, air control	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
114	108788	WASHER, flat	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
115	555630	WASHER, 5/16 external tooth lock	2	2	2	2	2	2	2	2	2	2	2	1	2	2	2
116	105328	SCREW, cap, hex head	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
117	114109	FITTING, elbow, male, swivel	1	1	1	1											
	121141	FITTING, elbow, swivel, 3/8t 1/4mnpt					1	1	1	1	1	1	1	1	1	1	1
118	C12508	TUBING, nylon, round					3	3	3	3	3	3	3	3	3	3	3
119◆	238909	WIRE, grounding	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
121	54139	TUBE, nylon, round	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
122	124071	PLUG, fitting, push-to-connect	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
123◆	16M588	HOSE, bundle, 25 ft external gel	1														
	16M587	HOSE, bundle, 25 ft internal gel								1				1			
	16M586	HOSE, bundle, 25 ft chop															
	16M591	HOSE, bundle, 35 ft external gel		1													
	16M590	HOSE, bundle, 35 ft internal gel					1				1				1		
	16M589	HOSE, bundle, 35 ft chop															
	16M585	HOSE, bundle, 50 ft external gel			1												
	16M584	HOSE, bundle, 50 ft internal gel						1				1				1	
	16M583	HOSE, bundle, 50 ft chop															
124◆	258970	GUN, external mix, chop, with cutter															
	258840	GUN, external mix, gel	1	1	1												
	258971	GUN, internal mix, chop, with cutter															
	258853	GUN, internal, gel					1	1		1	1	1		1	1	1	
125◆	16M736	SUPPLY HOSE, 55 gallon	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
126◆	16M810	KIT, tie strap & quick start & TSL	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
127◆	---	BOOM								1	1	1	1				
151◆ ▲	16D136	LABEL, warnings	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

◆ *Item not shown.*

▲ *Replacement Danger and Warning labels, tags and cards are available at no cost.*

Carts



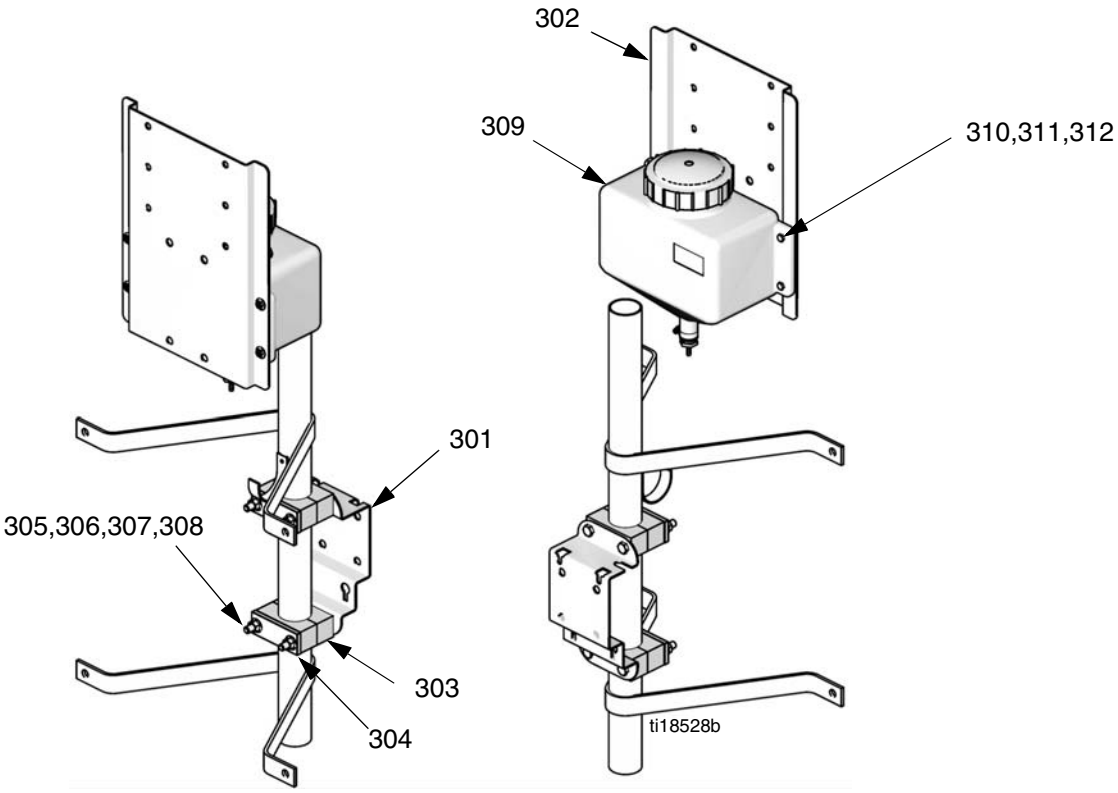
1 Apply sealant to threads.

Ref	Part	Description	Quantity	
			Cart, for use with boom	Cart, not for use with boom
201	16H973	CART, chop	1	
	16M627	CART, pole		1
202	24M161	RESERVOIR, gravity feed, 2.5 gallon	1	1
203	100023	WASHER, flat	4	4
204	110837	SCREW, flange, hex	4	4
205	111040	NUT, lock, insert, nylock, 5/16	4	4
207◆	16N611	BUSHING, filter, tank	1	1
208◆	24M586	FITTING, 1/4 npt x 3/8 tube	1	1
209	054106	TUBE, polyethylene, 0.375 OD	1.5	1.5
210	054118	TUBE, polyethylene	5	5
211◆	205264	FILTER, tip	1	1
221	16M465	CASTER, locking (not shown)		4
222	113962	WASHER (not shown)		4
223	100321	NUT (not shown)		4

◆ *Included in Catalyst Outlet Kit 16N854.*

Wall Mount Kit, 16N169

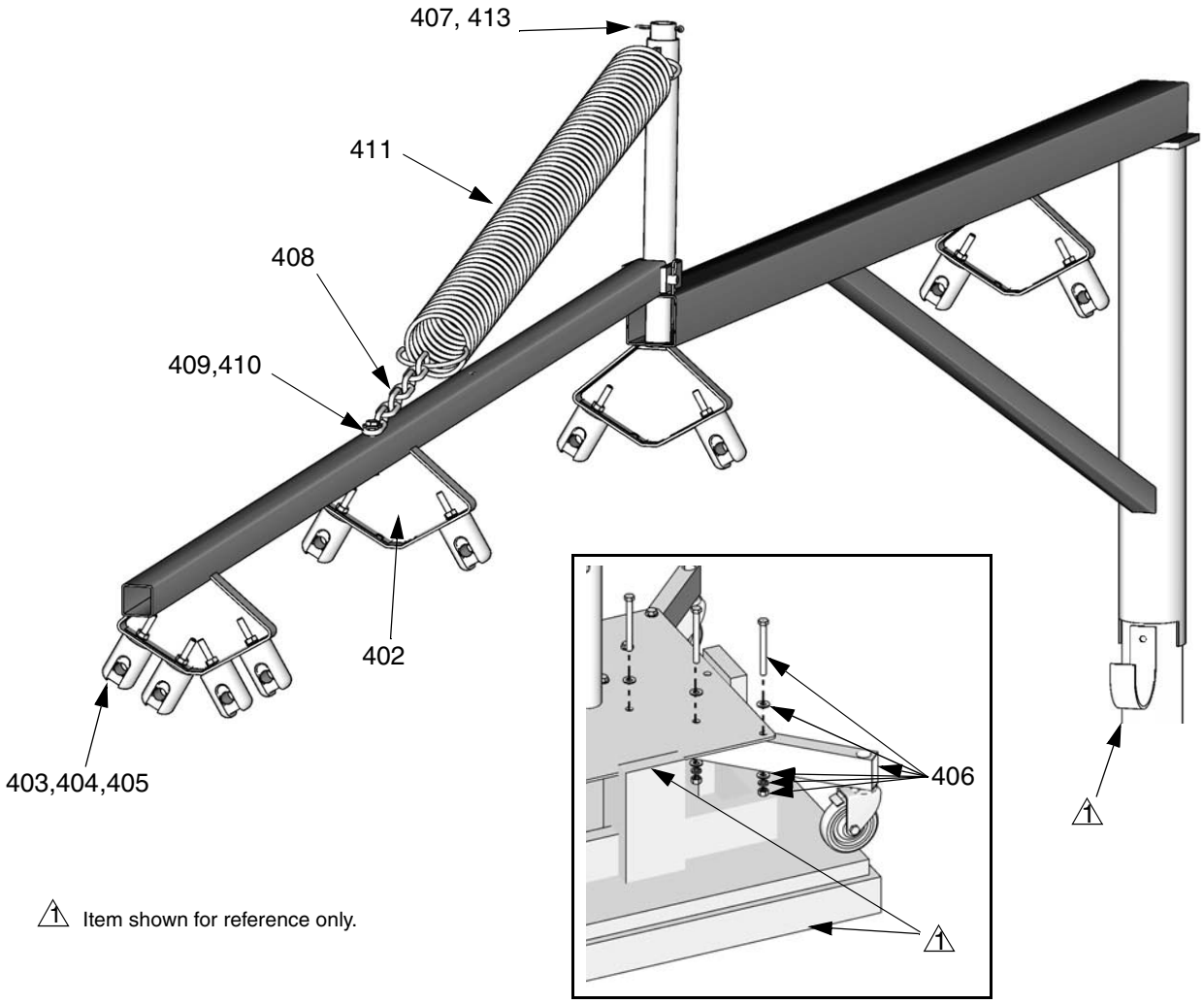
NOTE: For systems that do not use a cart.



Pole 16M670 not included in kit, shown for reference only

Ref	Part	Description	Qty
301	16M666	BRACKET, pump, pole mount	1
302	16M466	BRACKET, catalyst, 5 gal.	1
303	19891-00	CLAMP, pipe, set	4
304	19892-00	PLATE, cover, clamp	4
305	115211	SCREW, cap, hex head	8
306	113962	WASHER, hardened, sae	8
307	100321	NUT	8
308	100018	WASHER, lock, spring	8
309	24M161	RESERVOIR, gravity feed, 2.5 gallon	1
310	100521	SCREW, cap hex head	4
311	100023	WASHER, flat	4
312	111303	NUT, hex	4
313	---	SEALANT, anaerobic	1

Boom

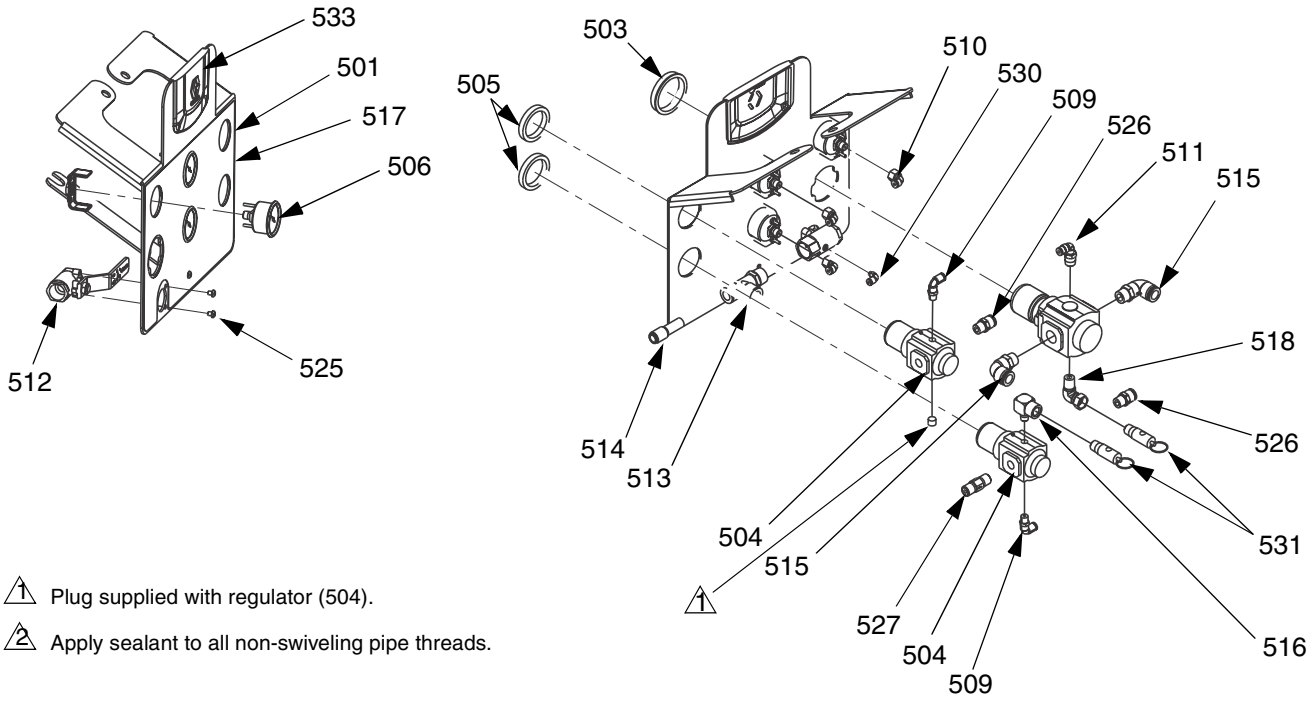


1 Item shown for reference only.

Ref	Part	Description	Qty
401◆	22546-00	STRAP, binding, rubber, reusable	10
402	16M626	COVER, roving guides	4
403	22486-00	GUIDE, roving, ceramic	10
404	100016	WASHER, lock	10
405	100015	NUT, hex	10
406	16N186	KIT, legs, cart	1
407	100103	PIN, cotter	1
408	16M811	CHAIN, spring, boom	1
409	112248	NUT, hex	1
410	105170	SCREW, cap hex head	1
411	444	SPRING, boom	1
412	555626	WASHER, 1/4 plain flat big	2
413	16M808	PIN, clevis with cotter pin	1

◆ Not shown.

Air Panel



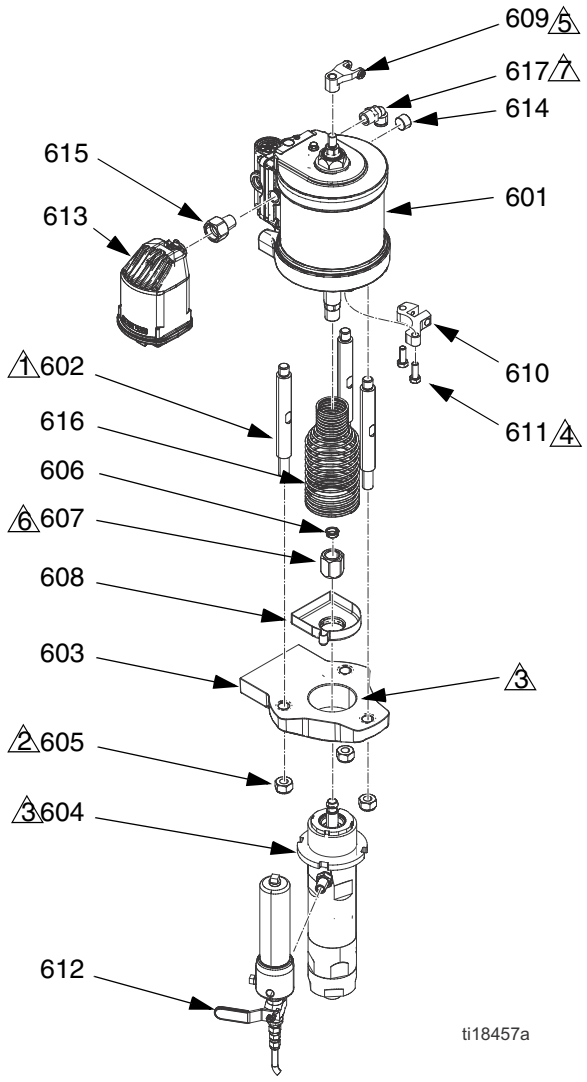
1 Plug supplied with regulator (504).

2 Apply sealant to all non-swiveling pipe threads.

Ref	Part	Description	Qty
501	---	PANEL, air control	1
502	15T536	REGULATOR, air, 3/8 npt	1
503	15T538	NUT, regulator	1
504	116513	REGULATOR, air	2
505	116514	NUT, regulator	2
506	15T500	GAUGE, pressure, air, 1/8	3
507	123985	FITTING, cross, 3/8 OD tube	1
508	123986	FITTING, elbow, 3/8 OD tube	2
509	15T866	FITTING, elbow, swivel, 1/8nptx5/32t	2
510	15T498	FITTING, 90°, swivel, 5/32t x 1/8fnpt	3
511	114469	FITTING, elbow, male, swivel	1
512	123990	VALVE, ball, 1/2 npt x 1/2 npt	1
513	123989	FITTING, tee, 1/2 OD tube x 3/4 npt	1
514	123988	FITTING, straight, 1/2 x 3/8 tube	1
515	121212	FITTING, elbow, swivel, 1/2t 3/8mnpt	2
516	867222	FITTING, fitting, 1/8 x 1/4	1
517	16M789	LABEL, air control panel, FRP	1
518	155541	FITTING, swivel, 90 degree	1
519	124071	PLUG, fitting, push-to-connect	1
520	C12508	TUBING, nylon, round	0.85
521	054139	TUBE, nylon, round	0.63
522	054753	TUBE, nylon, round, black	1.63

Ref	Part	Description	Qty
523	---	SEALANT, pipe	1
525	114381	SCREW, cap, button head	3
526	120389	FITTING, tube	2
527	124496	VALVE, air check	1
529	16N403	BRACKET, air control	1
530	124497	FITTING, elbow, swivel, air	1
531	113498	VALVE, safety, 110 psi	2
533	---	INSERT, control panel	1

Resin Pumplines



Ref	Part	Description	Quantity	
			W13DFC, 13:1	W17CFS, 17:1
601	M07LNL	MOTOR, double ended, 4.5 in.	1	1
602*	15M662	ROD, tie	3	3
603*	15T392	ADAPTER, displacement pump		1
	15T393	ADAPTER, displacement pump	1	
604	LW100C	PUMP, 100 cc	1	
	LW075S	PUMP, 75 cc		1
605*	15U606	NUT, lock, M16 x 2	3	3
606*	184128	COLLAR, coupling	2	2
607*	15T311	NUT, coupler	1	1
608*	15T338	RESERVOIR, TSL, 75cc lower		1
	15T339	RESERVOIR, TSL, 100cc lower	1	
609	16M784	LINK, yoke, upper	1	1
610	16M362	LINK, fixed, pivot	1	1
611	116596	SCREW, cap, hex head	2	2
612	24F300	FILTER, fluid, 5000 psi	1	1
613	117237	MUFFLER	1	1
614	100361	PLUG, pipe	1	1
615	15T560	FITTING, adapter, 1/2 npt x 1/2 nptf	1	1
616*	16M477	SPRING, guard	1	1
617	15V204	FITTING, elbow, 1/2 npt x 1/2 tube	1	1
618	---	SEALANT, pipe, stainless steel	1	1

* *Included in Connecting Kit. See page 58 to order the correct kit for your pump.*

1 Torque to 50-55 ft-lb (68-75 N•m).

2 Torque to 50-60 ft-lb (68-101 N•m).

3 Assemble pump (604) to top of pump adapter (603), plus or minus one thread. Packing nut will extend above the surface of pump adapter (603). Torque jam nut to 70-75 ft-lb (95-102- N•m).

4 Torque to 250 in-lb (28.2 N•m)

5 Torque to 70-75 ft-lb (95-102 N•m).

6 Torque to 75-80 ft-lb (102-108 N•m).

7 Apply thread sealant.

Resin Pumpline Kits

Kit Description	LW075S	LW100C
Wet-Cup O-Ring Package of 10	24A631	24A632
Coupling Collars (606) Package of 10	24A619	24A619
Connecting Kit Includes pump adapter (603), three tie rods (602), three tie rod nuts (605), TSL reservoir (608) and TSL bottle, adapter (603), coupling nut (607), three coupling collars (606), tie rod spring guard (616).	16N242	16N243

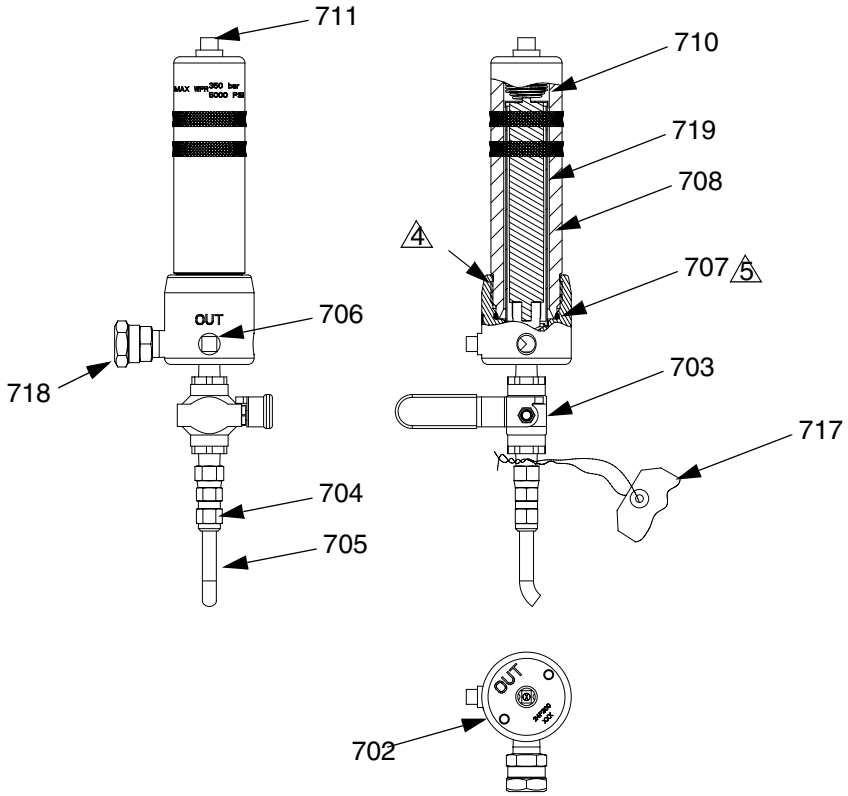
NOTE: For **displacement pump repair kits**, see manual 3A2313. For **air motor repair kits**, see manual 3A2315.

Air Motor and Pump for Resin Pumpline

See air motor manual 3A2313 and pump manual 3A2315 for parts identification.

Resin Filter

24F300



3 Press fit spring (710) to bottom of filter bowl (701).

4 Apply thread lubricant.

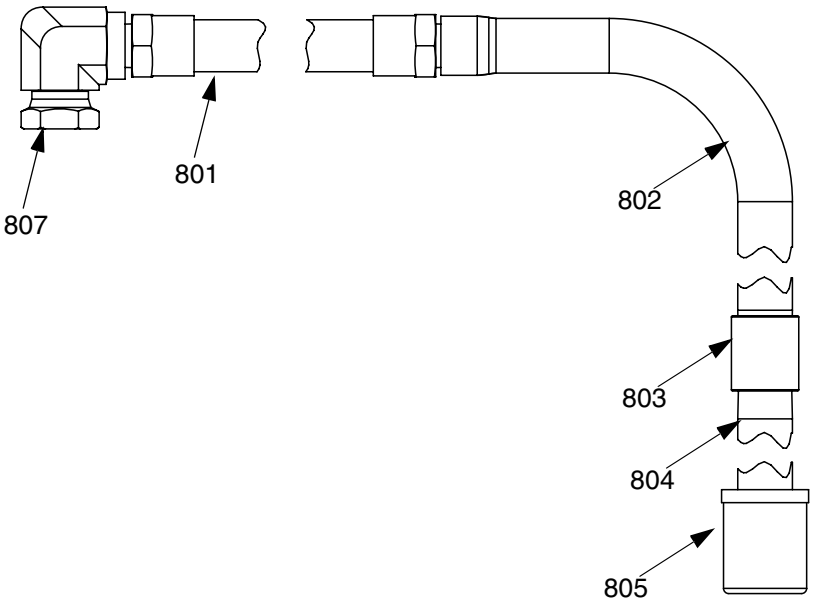
5 Apply grease.

6 Apply thread sealant to all non-swiveling pipe threads.

Ref	Part	Description	Qty
701	179773	BOWL, filter	1
702	171942	HEAD, filter	1
703	238635	VALVE, ball, carbon steel	1
704	205447	COUPLING, hose	1
705	061132	HOSE, nylon, 225 psi	7
706	100509	PLUG, pipe	1
707	104361	PACKING, o-ring	1
708	186075	SUPPORT, filter	1
710	171941	SPRING, compression	1
711	100040	PLUG, pipe	1
712	---	SEALANT, pipe	1
717	172479	TAG, warning	1
718	GC2069	FITTING, swivel, 3/8 nptm x 3/8 npsm	1
719	167026	STRAINER, mesh screen 100	1

Resin Supply Hose

16M736



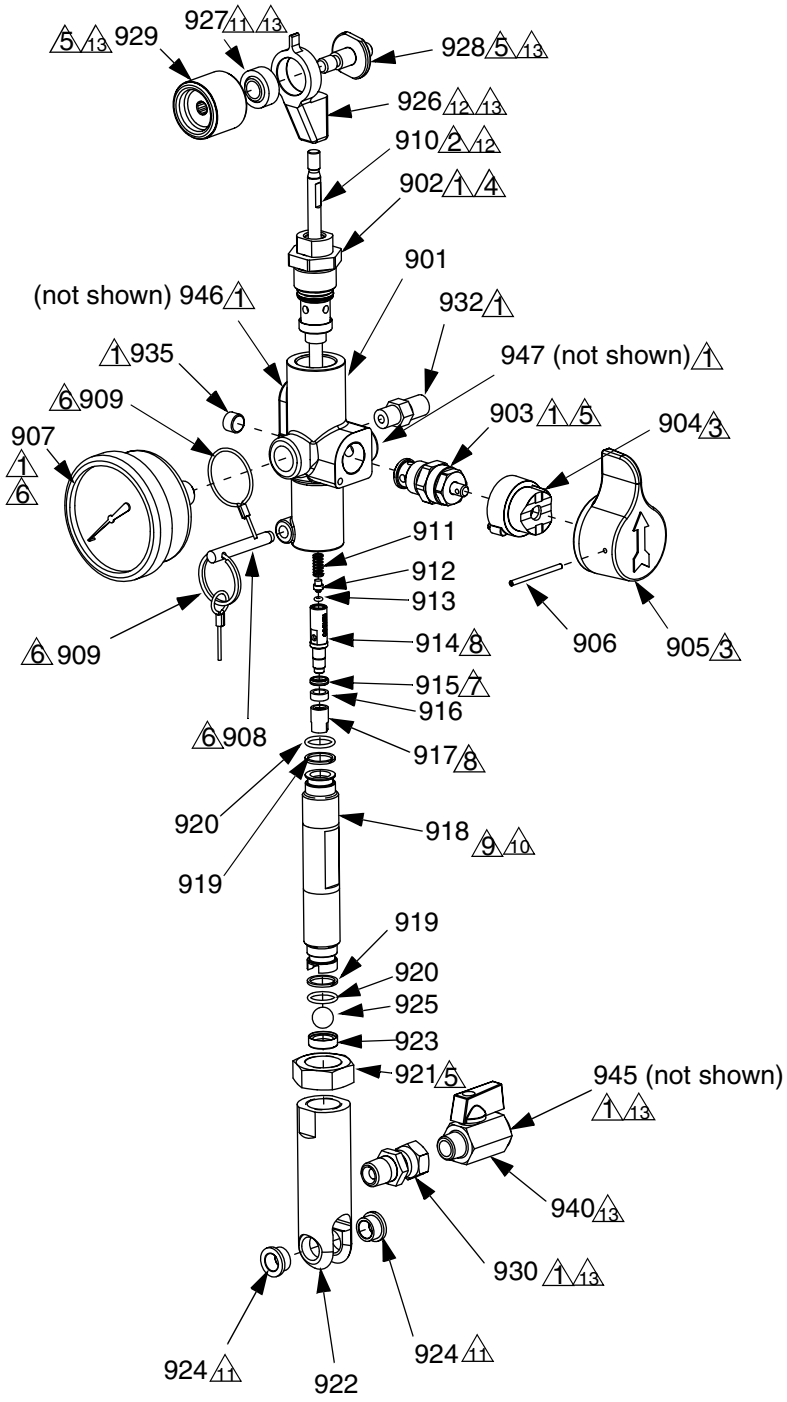
1 Apply pipe sealant to all non-swiveling pipe threads.

Ref	Part	Description	Qty
801	220372	HOSE, coupled, 6 ft	1
802	197682	TUBE, suction	1
803	114967	COUPLING, pipe, 1 in.	1
804	195151	TUBE, intake	1
805	20397-01	FILTER, mesh, 24, 1 in. npt	1
806	---	SEALANT, pipe	1
807	16M776	FITTING, elbow, 3/4 npsm x 1 nptf	1

Gun

See RS gun manual 3A0232 for parts identification.

Catalyst Slave Pumps



1. Apply pipe sealant to threads.
2. Apply adhesive lubricant to mating surfaces or threads.
3. Apply grease to mating surfaces or threads.
4. Torque to 240 in-lb (27.1 N•m).
5. Torque to 225-275 in-lb (25.4-31.1 N•m).
6. Loop large end of lanyard over gauge prior to assembling gauge. Attach small end of lanyard to split ring on pin.
7. Note orientation of u-cup.
8. Torque to 30-50 in-lb (3.4-5.6 N•m).
9. Clean cylinder inner diameter with soft cloth or equivalent, prior to assembly.
10. Hand tighten cylinder (918) and bottom out to housing (901). Back-off cylinder (918) less than 1/2 turn. Assembly pin (908).
11. Press fit bearings.
12. Torque piston rod (910) to top link (926) to 80-100 in-lb (9.0-11.3 N•m).

Catalyst Pumps

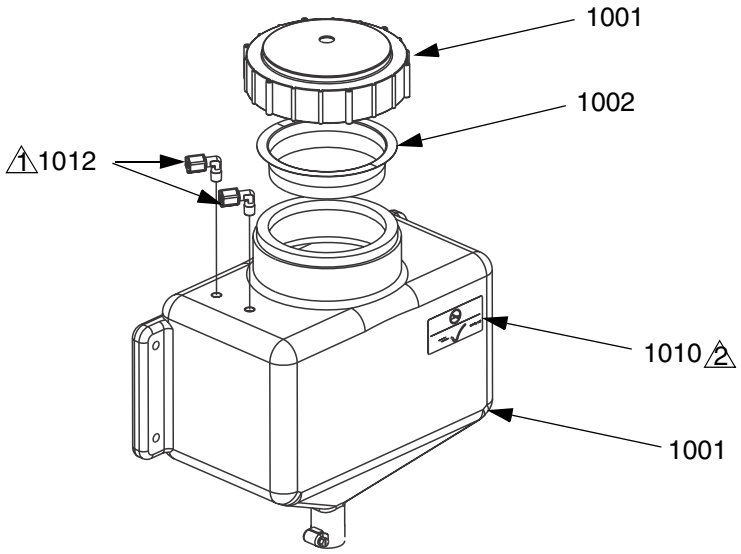
Ref.	Part	Description	Qty. 24C480, for Internal Mix	Qty. 24E230, for External Mix
901	16A197	HOUSING, slave pump	1	1
902	24C479	KIT, cartridge, FRP	1	1
903	24C661	VALVE, 3000 psi blow off	1	1
904	224807	BASE, valve	1	1
905	15C780	HANDLE	1	1
906	15C972	PIN, spring	1	1
907	113641	GAUGE, pressure, fluid	1	
	124432	GAUGE, 160 psi		1
908	123595	PIN, quick release	1	1
909	124193	CABLE, lanyard, 5 inch	1	1
910	16A660	ROD, piston, slave pump	1	1
911	123636	SPRING, transfer housing	1	1
912	16K928	VALVE, poppet	1	1
913	123934	O-RING, 003, FKM	1	1
914	16K960	HOUSING, transfer, etched	1	1
915	LPA-126	SEAL, radial	1	1
916	LPA-127	GUIDE, piston	1	1
917	16A666	CAP, transfer housing	1	1
918	16A662	CYLINDER, slave pump	1	1
919	CJ-143	O-RING, o-ring, silicone, 2-014	2	2
920	124061	RING, backup, 0.518 ID, 0.053 wide	2	2
921	LPA-144	NUT, lock	1	1
922	16M782	HOUSING, inlet, slave	1	1
923	LPA-139-01	SEAT, ball, 7/16 dia.	1	1
924	24M382	BEARING, flanged, 0.375 ID	2	2
925	LPA-134-02	BALL, spherical	1	1
926◆	---	LINK, top, slave, offset	1	1
927◆	---	BEARING, spherical	1	1
928◆	---	PIN, pivot	1	1
929◆	---	KNOB, pivot	1	1
930	114339	FITTING, union, swivel, 1/4 npt	1	1
932	123628	FITTING, adapter, 1/8 npt - #4 jic	1	1
934	297085	FITTING, elbow, 0.125 in., st		1
935	110208	PLUG, pipe, headless	1	
937	124379	VALVE, check, npte x npti, 100 psi		1
938	124381	FITTING, tee, push-to-connect, 1/4		1
939	054118	TUBE, polyethylene		0.5
940	16D768	VALVE, ball, mini	1	1
941	---	SEALANT, pipe	1	1
942	---	SEALANT, anaerobic	1	1
943	---	LUBRICANT, grease	1	1
945	24M586	FITTING, 1/4 npt x 3/8 tube	1	1
946	24M587	FITTING, 1/8 npt x 1/4 tube, 90	1	1
947	24M588	FITTING, 1/8 npt x 1/4 tube	1	2

--- Not for sale.

◆ *Parts available in repair kit 16N617.*

Catalyst Reservoir

24M161

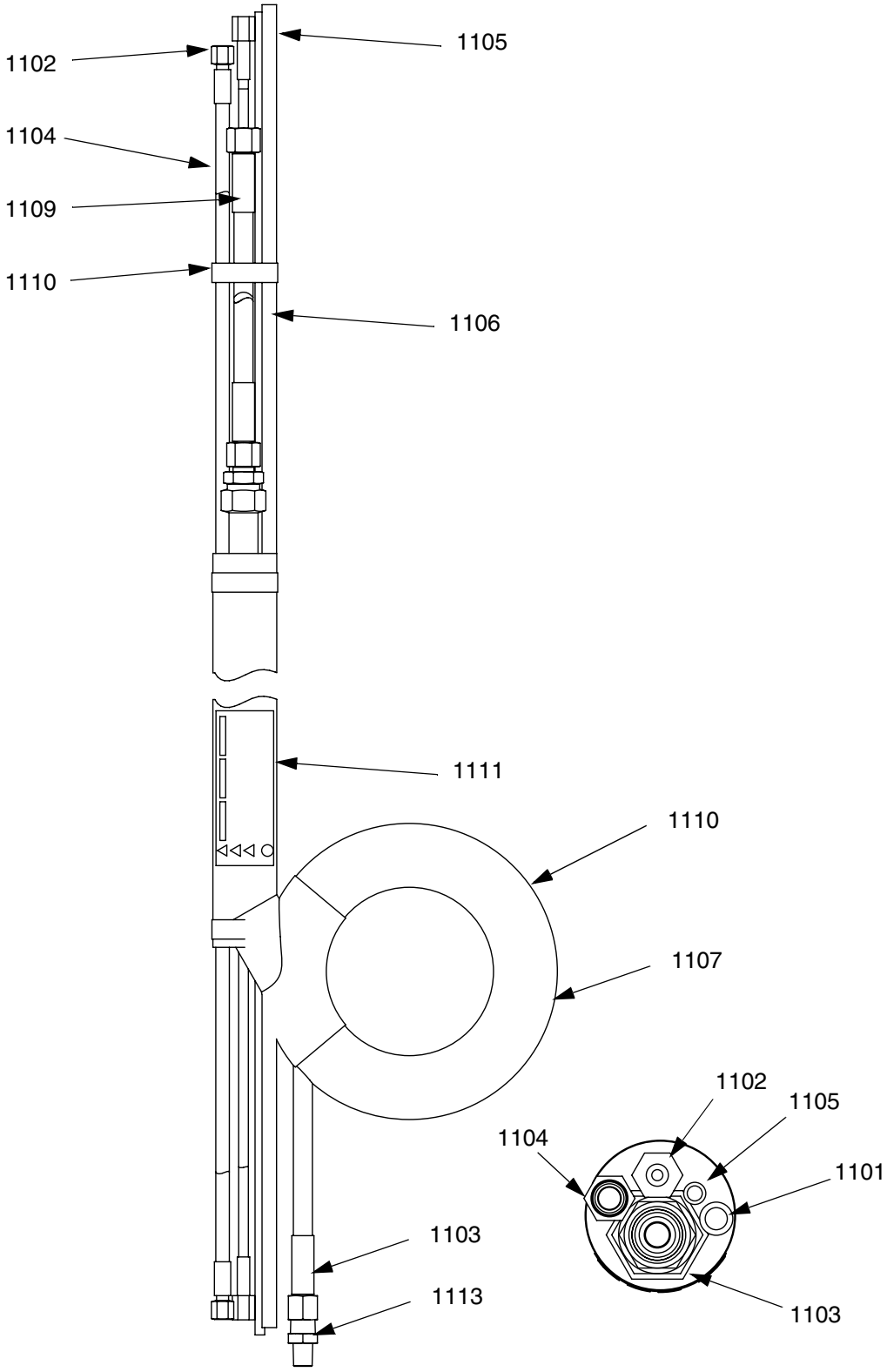


1 Apply pipe sealant to threads.

2 Apply sticker so that the level line is even with the 2.5 gallon mark on tank (1001).

Ref	Part	Description	Qty
1001	---	TANK, gravity feed, 2.5 gallon	1
1002	24M159	STRAINER, tank, gravity feed	1
1008	---	SEALANT, pipe, stainless steel	1
1010	16M754	LABEL, maximum fill line	1
1011	24M587	FITTING, 1/8 npt x 1/4 tube, 90 degree	2

Hose Bundles



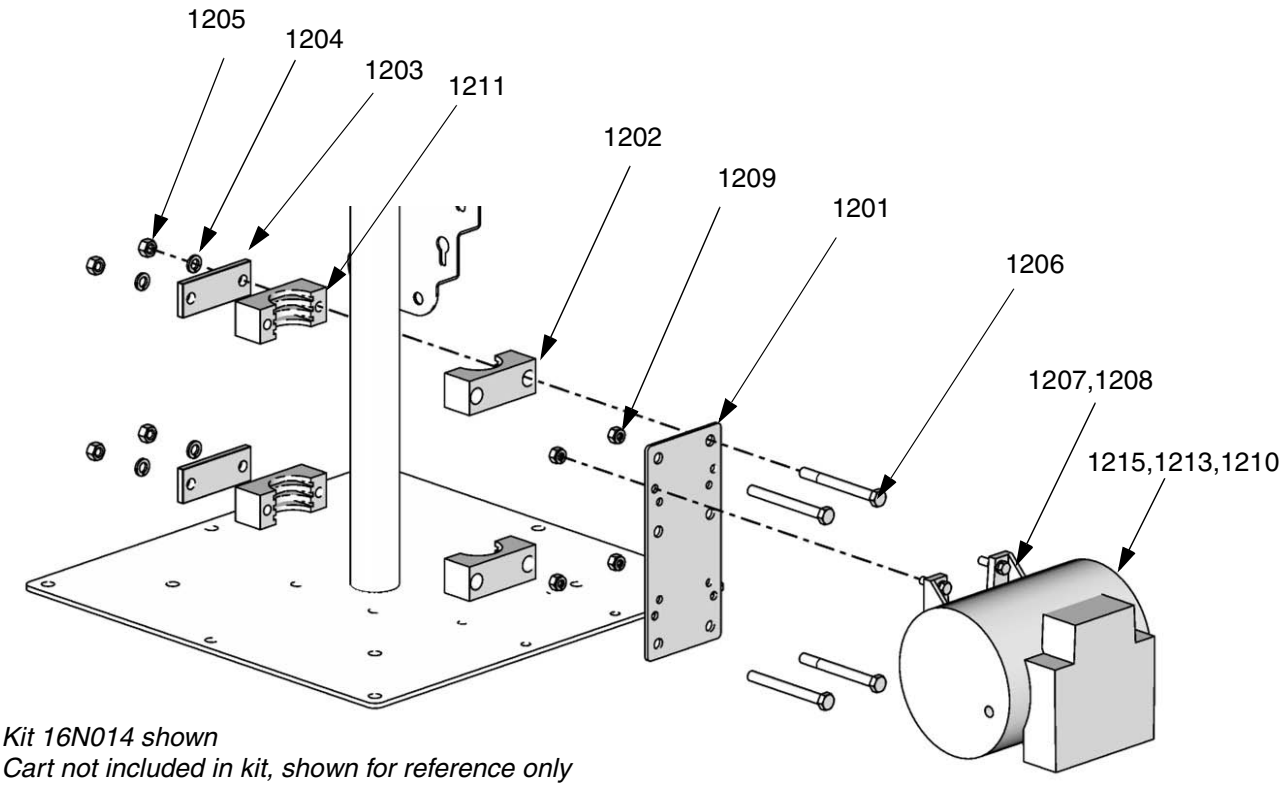
Hose Bundles

Ref	Part	Description	Quantity								
			16M583, 50 ft, chop	16M584, 50 ft internal gel	16M585, 50 ft external gel	16M586, 25 ft, chop	16M587, 25 ft, internal gel	16M588, 25 ft, external gel	16M589, 35 ft, chop	16M590, 35 ft, internal gel	16M591, 35 ft, external gel
1101	16J767	TUBE, 3/8 in., polyethylene, 28 ft				1	1				
	16J768	TUBE, 3/8 in., polyethylene, 38 ft							1	1	
	16J769	TUBE, 3/8 in., polyethylene, 53 ft	1	1							
1102	24C540	HOSE, coupled, 1/8 in., 3000 psi, 28 ft				1	1	1			
	24C541	HOSE, coupled, 1/8 in., 3000 psi, 53 ft	1	1	1						
	24G429	HOSE, coupled, 1/8 in., 3000 psi, 35 ft							1	1	1
1103	240797	HOSE, coupled, 3/8 x 50 ft		1	1		1	1		1	1
	277253	HOSE, coupled, 1/2 in. x 50 ft, 4000 psi	1			1			1		
1104	24C543	HOSE, coupled, 1/4 in., nylon, 28 ft				1	1	1			
	24C544	HOSE, coupled, 1/4 in., nylon, 53 ft	1	1	1						
	24G434	HOSE, coupled, 1/4 in., nylon, 40 ft							1	1	1
1105	054130	TUBE, polyethylene, 0.250 outer diameter	53		53	28		28	38		38
1106	124427	JACKET, blue scuff 22ft				2	2	2			
	124428	JACKET, blue scuff 47ft	1	1	1						
	16M599	JACKET, blue scuff 29ft							1	1	1
1107	16M606	JACKET, blue scuff 15ft							1	1	1
1108	158256	UNION, swivel	1			1			1		
1109	277249	HOSE, coupled, 1/4 in. x 3 ft, 4000 psi	1	1	1	1	1	1	1	1	1
1110	---	TAPE, electrical, vinyl	1	1	1	1	1	1	1	1	1
1111▲	16D659	LABEL, warning, hose bundle	1	1	1	1	1	1	1	1	1
1112	114271	STRAP, retaining				1	1	1	1	1	1
1113	123379	FITTING, reducer, 3/8 nptx1/4 npt		1	1		1	1		1	1
	162449	FITTING, nipple, reducing	1			1			1		

▲ *Replacement Danger and Warning labels, tags and cards are available at no cost.*

Accessory Parts

Heater Kits



Kit 16N014 shown
Cart not included in kit, shown for reference only

Heater Kits

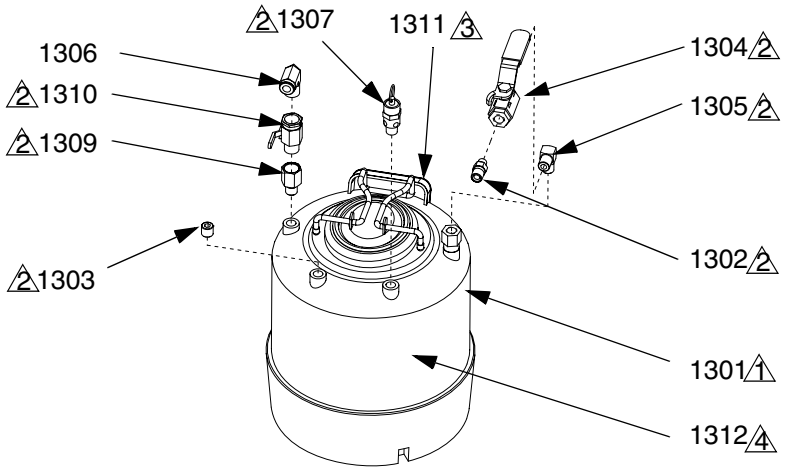
Ref	Part	Description	Quantity					
			16N014, 120v, FM	16N015, 240v, FM	16N016, 120v, hazardous	16N017, 240v, hazardous	16N018, 120v, non-hazardous	16N019, 240v, non-hazardous
1201	16N013	BRACKET, heater	1	1	1	1	1	1
1202	19891-00	CLAMP, pipe, set	2	2	2	2	2	2
1203	19892-00	PLATE, cover, clamp	2	2	2	2	2	2
1204	100018	WASHER, lock, spring	4	4	4	4	4	4
1205	100321	NUT	4	4	4	4	4	4
1206	115211	SCREW, cap, hex head	4	4	4	4	4	4
1207	100003	SCREW, cap, hex head	4	4	4	4	4	4
1208	100133	WASHER, lock, 3/8	4	4	4	4	4	4
1209	100131	NUT, full hex	4	4	4	4	4	4
1210	114506	FITTING, elbow, male 90 deg.	1	1	1	1	1	1
1211	100081	BUSHING, pipe	1	1	1	1	1	1
1212◆	24C406	HOSE, coupled, 5000psi, 3ft	1	1	1	1	1	1
1213	159239	FITTING, nipple, pipe, reducing	1	1	1	1	1	1
1214	---	TAPE, ptfe 1/2 in. wide	1	1	1	1	1	1
1215	245848	HEATER, viscon HP			1			
	245863	HEATER, viscon HP				1		
	245867	HEATER, viscon HP					1	
	245869	HEATER, viscon HP						1
	226819	HEATER, viscon, 240 volt		1				
	226816	HEATER, viscon, 120 volt	1					

* *Items are available in heater hardware kit 16N119.*

◆ *Item not shown.*

Solvent Pressure Pot Kits

ASME Pressure Pots, 16M893 and 16M894



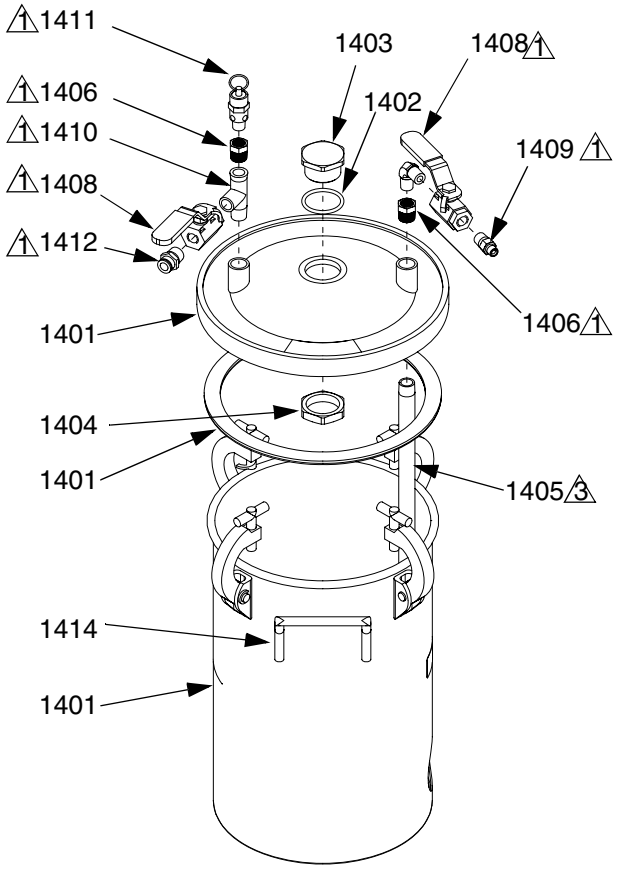
1 To assemble strainer (1311), remove the dip tube from tank (1301). Slide strainer onto bottom end of dip tube. Hold strainer in place while positioning dip tube. Strainer should be secure on ube and pressed to bottom of tank. Tighten dip tube in place. Strainer not shown.

2 Apply pipe sealant.

3 Clamp ground cable (1311) to handle on tank (1101). Ground cable not shown.

Ref	Part	Description	Qty
1301	20324-00	TANK, solvent, 2 gallon (assembly 16M893 only)	1
	20324-01	TANK, solvent, 5 gallon (assembly 16M894 only)	1
1302	16D939	FITTING, nipple, reducing	1
1303	11021-23	PLUG, pipe, 1/4	1
1304	18470-05	VALVE, ball, 2-way, 1/4nptf	1
1305	RM-856-04	FITTING, elbow, 1/4 nptm x 1/4 nptm	1
1306	20655-04	FITTING, elbow, 3/8 nptm x 3/8 tube	1
1307	103347	VALVE, safety, 100 psi	1
1308	21035-00	STRAINER, pick-up, material	1
1309	21462-01	FITTING, adapter, 1/4 nptm x 3/8 nptf	1
1310	3165	VALVE, ball, 2-way, 3/8 female, 3/8 male	1
1311	17440-00	CLAMP, grounding	1
1312	---	LABEL, designation	1
1313	---	SEALANT, pipe	1

ASME and CE-Approved Pressure Pots, 16M874 and 16M875



1 Apply pipe sealant.

2 Clamp ground cable (1423) to handle on tank (1401). Ground cable not shown.

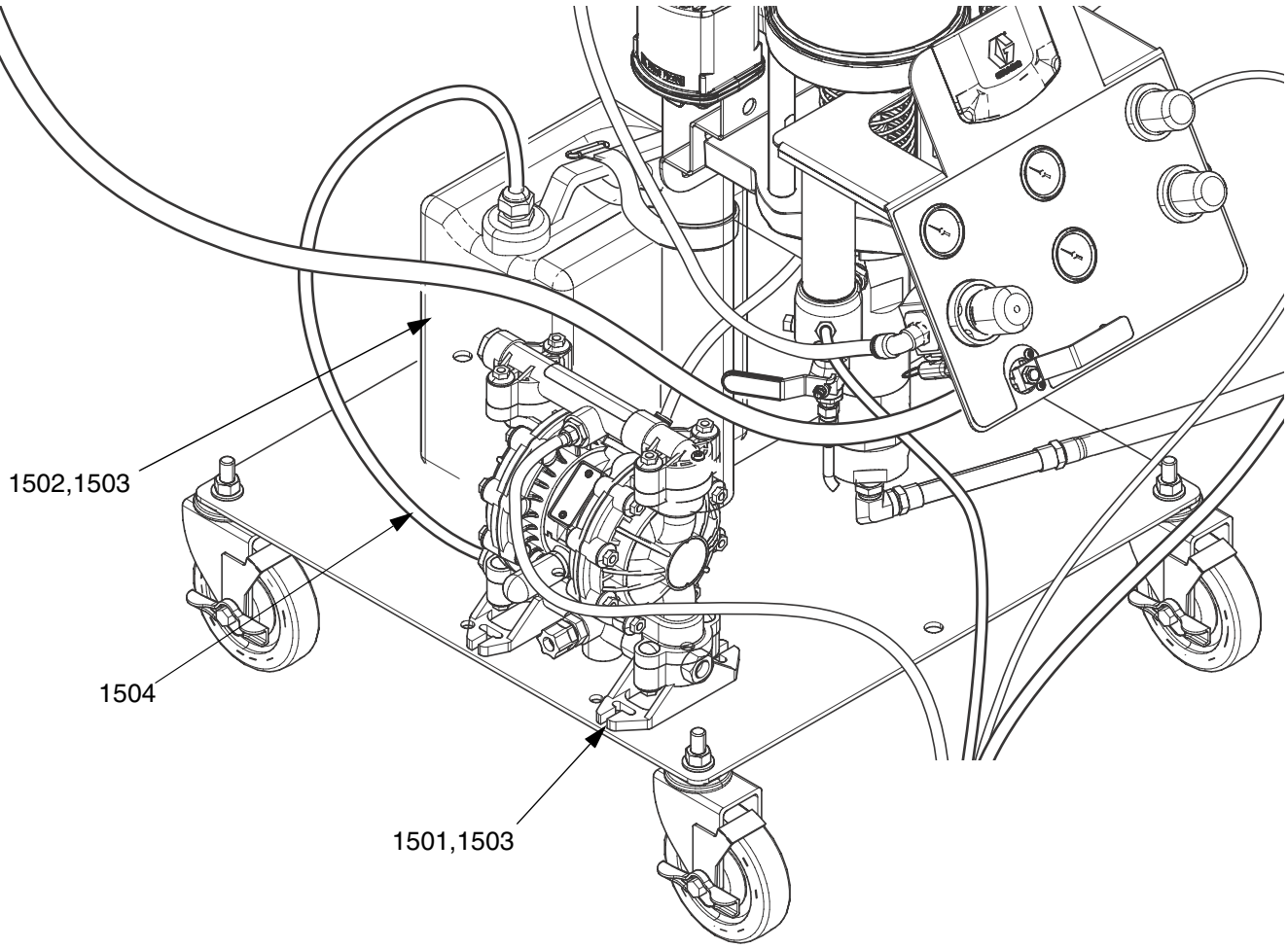
3 Must be installed on the outlet side. The outlet is the port without the cross hole.

Ref	Part	Description	Qty
1401	236086	TANK, pressure assy, 2 gal. (assembly 16M874 only)	1
	236087	TANK, pressure assy, 5 gal. (assembly 16M875 only)	1
1402	165053	PACKING, o-ring	1
1403	188880	PLUG, lid	1
1404	188784	NUT, jam, hex	1
1405	171976	TUBE (assembly 16M875 only)	1
	185531	TUBE, siphon (assembly 16M874 only)	1
1406	125214	BUSHING, hex, 3/8npt x 1/4npt, male/female	2
1407	111763	FITTING, elbow, 1/4 npt	1
1408	18470-05	VALVE, ball, 2-way, 1/4nptf	2
1409	16D939	FITTING, nipple, reducing	1
1410	108673	TEE, street	1
1411	103347	VALVE, safety, 100 psi	1
1412	121140	FITTING, connector, male, 3/8 npt	1
1413	210575	CAP, filler (assembly 16M875 only, not shown)	1
1414	176347	LABEL, identification	1
1415	---	LABEL, designation	1
1416▲	175078	LABEL, warning	1
1417	---	SEALANT, pipe,	1
1418	---	SEALANT, anaerobic	1
1421	308370	MANUAL	1
1423	17440-00	CLAMP, grounding	1
1424	171988	O-RING (for filler cap, item 1413, not shown)	1

▲ *Replacement Danger and Warning labels, tags and cards are available at no cost.*

Solvent Diaphragm Pumps

16M560 and 16M561

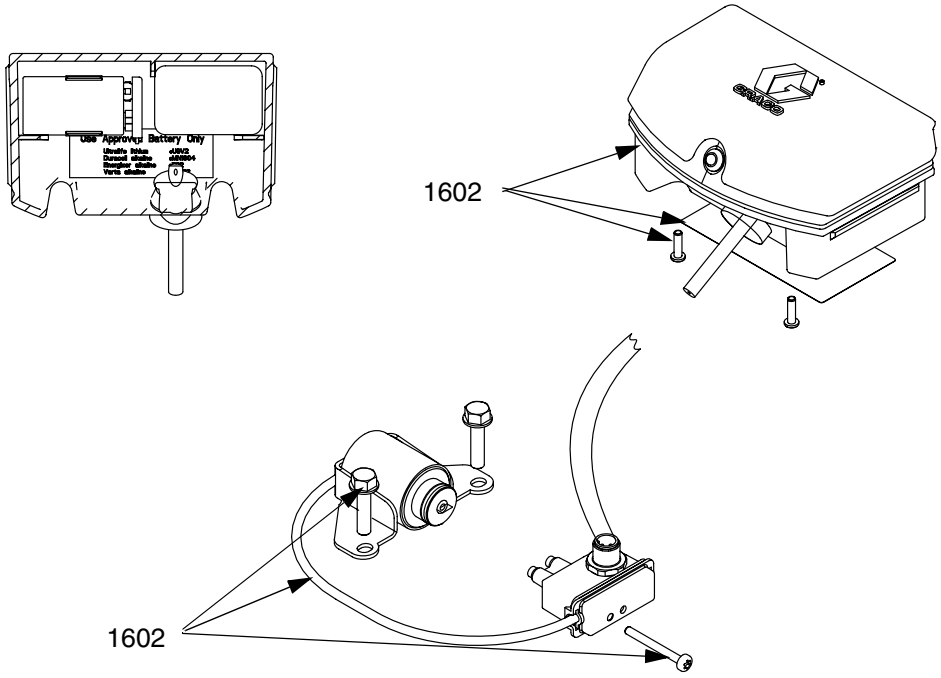


Base System shown for reference only

Ref	Part	Description	Qty
1501	16M559	PUMP, solvent, FRP, flush	1
1502	16M652	TANK, solvent, 2.5 gal assembly (assembly 16M560 only)	1
	16M651	TANK, solvent, 5 gal assembly (assembly 16M561 only)	1
1503	16M769	KIT, pump fasteners	1
1504	C12508	TUBING, nylon, round	3

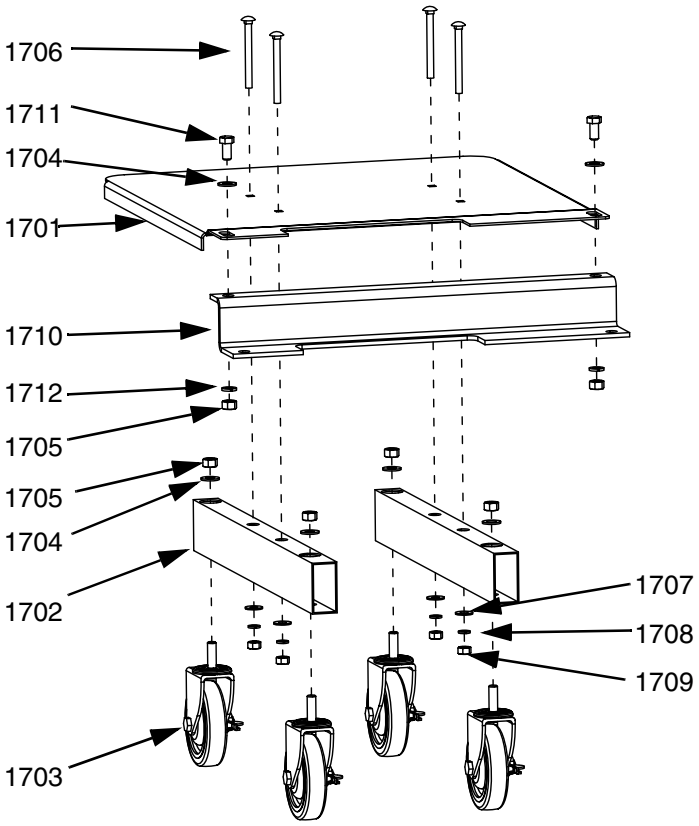
DataTrak Upgrade Kit

16M881



Ref	Part	Description	Qty
1601	24A354	SMART AIR VALVE (not shown)	1
1602	24A576	DATATRAK CONVERSION KIT	1

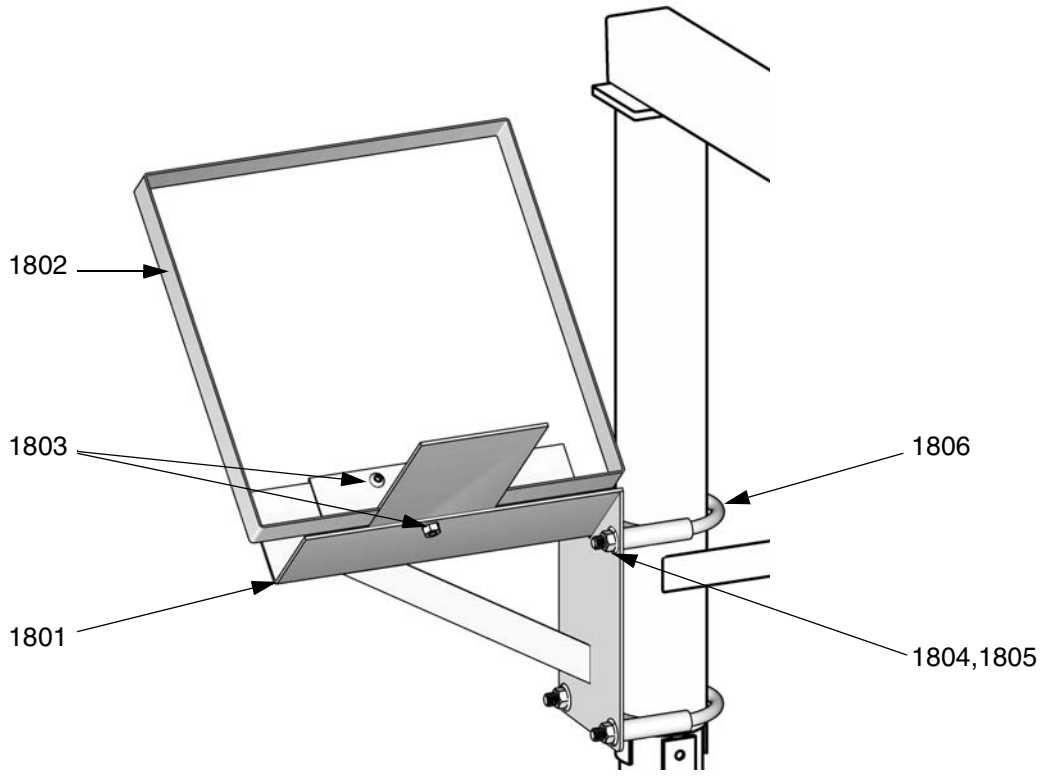
Carts for 55 Gallon Barrel



Ref	Part	Description	Quantity	
			16M896, for Cart and Boom Systems	16M897, for Cart Systems
1701	16M665	PLATE, 55 gallon drum	1	1
1702	16H977	LEG, cart, short	2	2
1703	16M465	CASTER, locking	4	4
1704	113962	WASHER, hardened, sae	4	6
1705	100321	NUT	4	6
1706	101185	BOLT, carriage	4	4
1707	100132	WASHER, flat	4	4
1708	100133	WASHER, lock, 3/8	4	4
1709	100131	NUT, full hex	4	4
1710	16M667	BRACKET, 55 gal cart, pole cart		1
1711	113961	SCREW, cap, hex head		2
1712	100018	WASHER, lock, spring		2

Roving Box Bracket

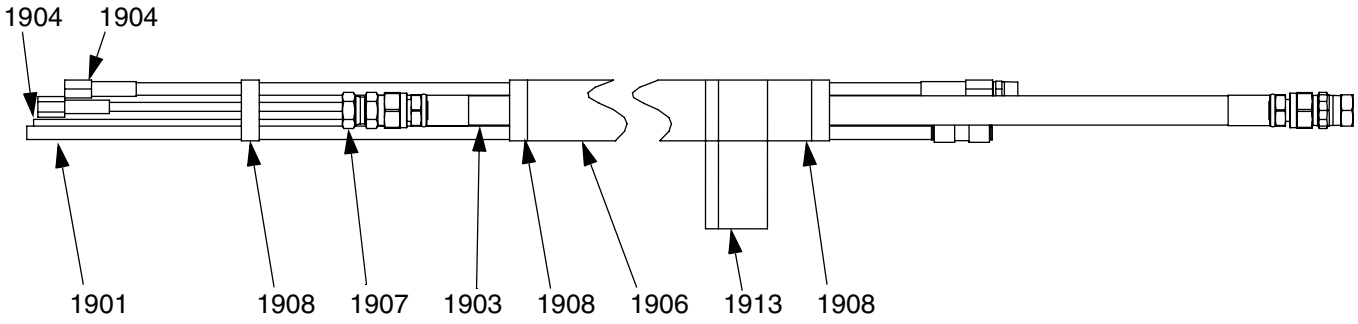
16M961

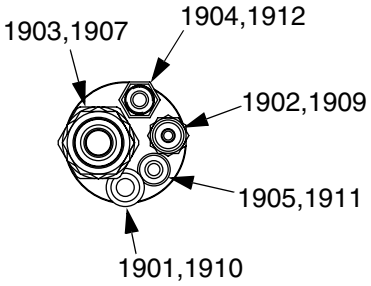


Ref	Part	Description	Qty
1801	16M619	BRACKET, roving	1
1802	16M622	BRACE, roving box	1
1803	122741	SCREW, hex cap, 1/4 x 0.50	2
1804	104123	WASHER, lock, spring	2
1805	112248	NUT, hex	2
1806	16M965	CLAMP, u-bolt	2
1807◆	15J889	SCREW, hex	2

◆ *Item not shown.*

Extension Hoses

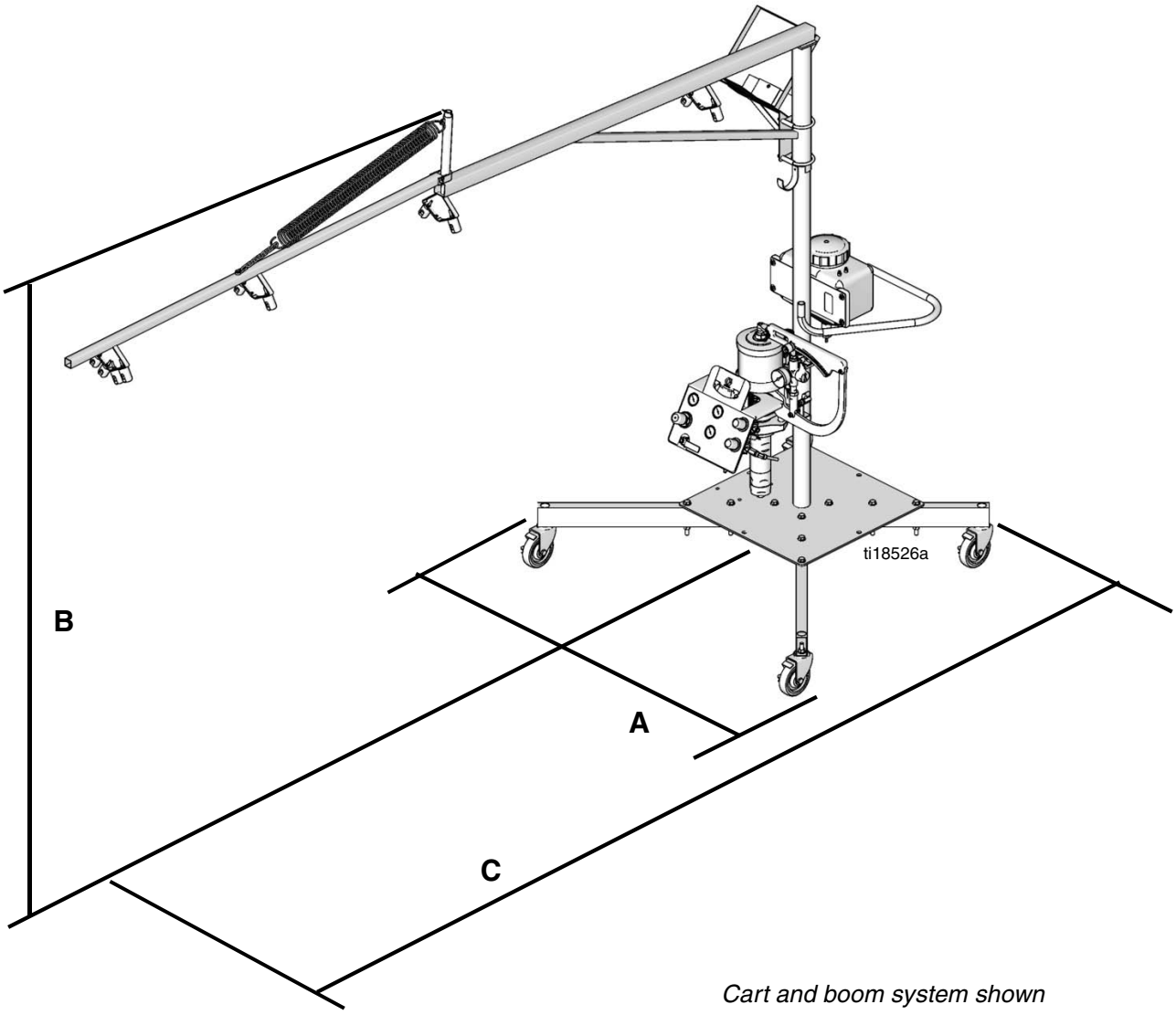




Ref	Part	Description	Quantity		
			16M712, for cart and boom systems	16M718, for internal gel	16M719, for external gel
1901	16J766	TUBE, 3/8 in. polyethylene, 25 ft	1	1	
1902	24J730	HOSE, coupled, 1/8 in., 3000 psi, 25 ft	1	1	1
1903	240796	HOSE, coupled, 3/8 x 25'		1	1
	16M731	HOSE, coupled, 1/2 in. x 25', 4000 psi	1		
1904	24J731	HOSE, coupled, 1/4 in., nylon, 25 ft	1	1	1
1905	054130	TUBE, polyethylene, 0.250 OD	25		25
1906	124427	JACKET, blue scuff, 22 ft	1	1	1
1907	158256	UNION, swivel	1		
1908	---	TAPE, electrical, vinyl	1	1	1
1909	123553	FITTING, nipple, #4 JIC	1	1	1
1910	123554	COUPLER, 3/8 in. OD tubing	1	1	
1911	123789	COUPLER, 1/4 in. OD tubing	1		1
1912	123552	FITTING, nipple, 1/8 npt	1	1	1
1913▲	16D659	LABEL, warning, hose bundle	1	1	1

▲ *Replacement Danger and Warning labels, tags and cards are available at no cost.*

Dimensions

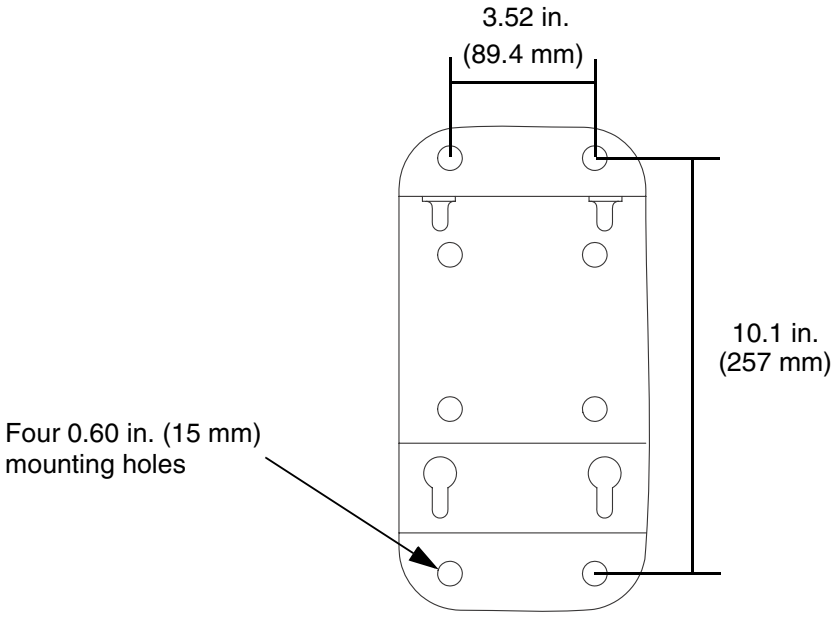


Cart and boom system shown

Ref.	Cart and Boom	Cart Only	Wall/Pole Mount
A (Max Width)	144 in. (3658 mm)	29.5 in. (749 mm)	39.0 in. (991 mm)
B (Max Height)	100 in. (2540 mm)	47.75 in. (1213 mm)	46.6 in. (1183 mm)
C (Max Depth)	180 in. (4572 mm)	32.5 in. (826 mm)	32 in. (813 mm)

Pumpline Wall Mounting Bracket Dimensions

The pumpline bolts directly to this mounting plate.



Technical Data

System Technical Data

Maximum fluid working pressure	*13:1 Systems:* 1300 psi (9 MPa, 90 bar) *17:1 Systems:* 1700 psi (11.9 MPa, 119 bar)
Maximum air inlet pressure	100 psi (0.7 MPa, 7.0 bar)
Maximum air inlet pressure to ASME solvent pressure pots	100 psi (0.7 MPa, 7.0 bar)
Typical flow rate of pattern guns	Refer to RS Gun manual. See **Related Manuals**, page 3.
Maximum fluid temperature	110°F (43°C)
A component (catalyst) inlet size	1/4 in. tube
B component (resin) inlet size	1 5/16-12 UN-2A male
Wetted parts	Stainless steel, carbide, UHMWPE, PTFE, and acetal.

Pumpline Technical Data

Maximum fluid working pressure	*13:1 Systems:* 1300 psi (9 MPa, 90 bar) *17:1 Systems:* 1700 psi (11.9 MPa, 119 bar)
Maximum air inlet pressure	100 psi (0.7 MPa, 7.0 bar)
Minimum air inlet pressure	10 psi (0.07 MPa, 0.7 bar)
Maximum ambient air temperature	120°F (49°C)
Maximum fluid temperature	160°F (71°C)
Stroke length	2.0 in. (51 mm)
Sound data	See Technical Data in air motor manual 3A2315.
Wetted parts	Stainless steel, tungsten carbide with 6% nickel, UHMWPE, PTFE, *LW100C displacement pump only:* Also includes carbon steel

Catalyst Pump Technical Data

Maximum fluid working pressure	
Internal catalyst pump version	2000 psi (14.0 MPa,140 bar)
External catalyst pump version	90 psi (0.63 MPa, 6.3 bar)
Maximum fluid temperature	110°F (43°C)
Weight	3.5 lb (1.6 kg)
Wetted parts	301, 303, 304, 316, and 17-4 PH grades of stainless steel, silicon nitride, acetal, perfluoroelastomer, PE, PTFE, UHWMPE, nylon

Whip Hose Technical Data

Hose bundles maximum fluid working pressure and wetted materials	
Catalyst hose	3000 psi (21.0 MPa, 210 bar); PTFE
1/2 in. resin hose	4000 psi (28.0 MPa, 280 bar); nylon
3/8 in. resin hose	3300 psi (23.1 MPa, 231 bar); nylon
Solvent/AAC air hose	225 psi (1.6 MPa, 16 bar); nylon
3/8 in. OD air hose	125 psi (0.9 MPa, 9 bar); PET
1/4 in. OD atomizing/AAC air hose	125 psi (0.9 MPa, 9 bar); PET

Resin Pump, Catalyst Pump, Solvent Pump, and Heater Technical Data

See component manuals listed on page 3 for technical data.

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This warranty is conditioned upon the prepaid return of the equipment claimed to be defective to an authorized Graco distributor for verification of the claimed defect. If the claimed defect is verified, Graco will repair or replace free of charge any defective parts. The equipment will be returned to the original purchaser transportation prepaid. If inspection of the equipment does not disclose any defect in material or workmanship, repairs will be made at a reasonable charge, which charges may include the costs of parts, labor, and transportation.

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